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Volume 5, Chapter 8, 2 of 2

DAMAGE TOLERANT DESIGN HANDBOOK

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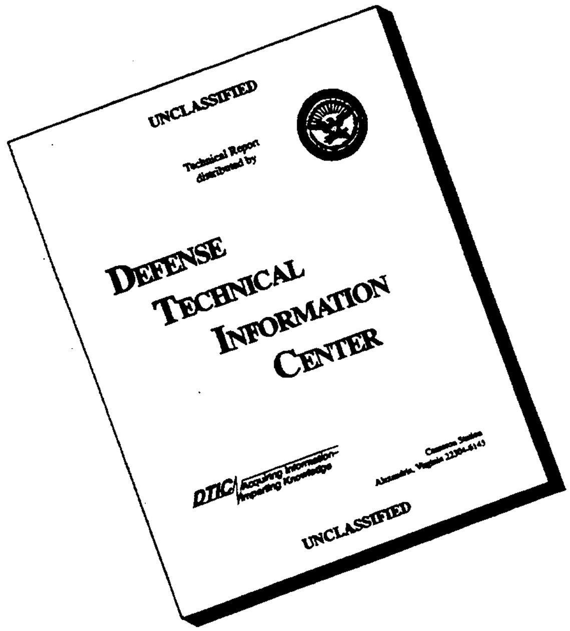

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This report presents a compilation of mechanical property data that are useful for damage tolerant design and analyses. The data of this handbook combines the old data that were previously presented in MCIC-HB-OIR (Damage Tolerant Design Handbook, December 1983) and more recent data that were collected from various sources. The fracture toughness, crack growth, R-curve, sustained load and threshold data are for alloy and stainless steels, nickel based super alloys, titanium alloys and aluminum alloys.

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Foreword

This report summarizes the results of a damage tolerant, material property data collection and reporting program conducted under USAF Contract F33615-91-C-5610. The work was sponsored by the Materials Directorate of Wright Laboratory with Mr. Jack Coate of the Systems Support Division serving as the project monitor. The technical effort was conducted between June 1991 and January 1994. The work was performed by the University of Dayton Research Institute under the general supervision of Dr. Joseph P. Gallagher with Dr. Alan P. Berens serving as Principal Investigator.

This final report comprises eight chapters which are presented in five volumes as follows:

VOLUME	CHAPTER	DESCRIPTION
1	1	Handbook organization and content
	2	Methods of calculation
	3	Alloy Steels
	4	Stainless Steels
2	5	Nickel Based Super Alloys
	6	Titanium Alloys
3	7	Aluminum 2000/6000 Series Alloys
4 & 5	8	Aluminum 7000/8000 Series Alloys

A detailed listing of the materials represented in the Handbook is contained in the preceding Table of Contents. In the body of the Handbook, the pages are numbered within chapters and the relevant portion of the table of contents is repeated at the beginning of each chapter.

CHAPTER 8 (CONTINUED)
ALUMINUM 7000/8000 SERIES ALLOYS SECTIONS

VOLUME 4

VOLUME 5

TABLE 8.10.1.1

MEAN PLANE STRAIN FRACTURE TOUGHNESS FOR ALUMINUM 7000/8000 SERIES ALLOY 7075 (ALCLAD) AT ROOM TEMPERATURE

Product Form	Condition/Heat Treatment	K_{Ic} ($ksi\sqrt{in}$) Specimen Orientation L-T			T-L			S-L		
		Mean K_{Ic}	Std Dev	n	Mean K_{Ic}	Std Dev	n	Mean K_{Ic}	Std Dev	n
Plate	T7651	28.6	2.2	3	25.2	1.9	26	---	---	---

TABLE 8.10.1.2

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF STRESS INTENSITY FACTOR ΔK 7075 (ALCLAD) AT ROOM TEMPERATURE

ORIENTATION: T-L **ENVIRONMENT: Lab Air**

CONDITION/ HEAT TREATMENT	PRODUCT FORM	R	FREQ (Hz)	*FCGR* (10^{-6} *in/cycle*) ΔK Level ($Ksi\sqrt{in}$)					
				2.5	5.0	10.0	20.0	50.0	100.0
T6	SHEET	0.	13.3			7.23	73.65		
		0.05	30		0.44				
		0.2	30	0.08	0.72				
		0.33	13.3			13.06	285.41		
		0.4	30	0.17					

TABLE 8.10.2.1

ALUMINUM 7075 (ALCLAD) K_{Ic}

CONDITION	PRODUCT FORM	PRODUCT THICK (in.)	TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN WIDTH (in.) W	SPECIMEN THICK (in.) B	SPECIMEN DESIGN	CRACK LENGTH (in.) A	2.5 * (K_{Ic}/TYS)^2 (in.)	K_{Ic} (Ksi√in.)	K_{Ic} MEAN	STAN DEV	DATE	REFER
T7651	Plate	0.62	R.T.	L-T	66.0	2.002	0.617	CT	1.021	0.48	29.10	28.6	2.2	1978	MPC01
		0.62			66.0	2.008	0.617	CT	1.064	0.52	30.50			1978	MPC01
		0.62			67.6	2.011	0.637	CT	1.086	0.36	26.20			1978	MPC01
T7651	Plate	0.62	R.T.	T-L	---	2.017	0.636	CT	1.049	---	23.10	25.2	1.9	1978	MPC01
		0.62			62.6	2.000	0.632	CT	1.000	0.44	26.40			1978	MPC01
		0.62			62.6	1.985	0.632	CT	1.032	0.46	27.10			1978	MPC01
		0.62			62.6	1.996	0.632	CT	1.018	0.46	27.10			1978	MPC01
		0.62			64.1	1.984	0.625	CT	0.992	0.46	27.90			1978	MPC01
		0.62			64.1	1.984	0.623	CT	0.992	0.48	28.70			1978	MPC01
		0.62			64.1	1.998	0.624	CT	1.039	0.46	27.80			1978	MPC01
		0.50			64.4	1.000	0.506	CT	0.520	0.27	21.80			1978	MPC01
		0.50			64.4	1.006	0.506	CT	0.503	0.28	22.50			1978	MPC01
		0.50			64.8	1.012	0.502	CT	0.516	0.28	22.20			1978	MPC01
		0.62			65.0	2.006	0.615	CT	1.023	0.42	26.90			1978	MPC01
		0.62			65.0	2.005	0.615	CT	1.002	0.40	26.60			1978	MPC01
		0.62			65.0	2.000	0.617	CT	1.000	0.42	26.90			1978	MPC01
		0.62			67.5	2.011	0.617	CT	1.066	0.32	24.80			1978	MPC01
		0.62			67.5	1.984	0.617	CT	1.091	0.36	26.00			1978	MPC01
		0.62			67.5	1.990	0.617	CT	1.015	0.32	24.50			1978	MPC01
		0.60			67.8	2.018	0.605	CT	1.009	0.34	25.60			1978	MPC01
		0.62			67.8	2.002	0.605	CT	1.001	0.34	25.70			1978	MPC01
		0.62			67.8	2.002	0.605	CT	1.001	0.34	25.20			1978	MPC01
		0.62			68.7	2.012	0.635	CT	1.006	0.30	24.20			1978	MPC01

TABLE 8.10.2.1 (CONTINUED)

ALUMINUM 7075 (ALCLAD) K_{Ic}

CONDITION	PRODUCT		TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN			CRACK LENGTH (in.) A	2.5 * $(K_{Ic}/TYS)^2$ (in.)	K_{Ic}			DATE	REFER
	FORM	THICK (in.)				WIDTH (in.) W	THICK (in.) B	DESIGN			K_{Ic} (Ksi√in.)	K_{Ic} MEAN	STAN DEV		
T7651 Cont'd	Plate Cont'd	0.62	R.T. Cont'd	T-L Cont'd	68.7	2.006	0.635	CT	1.023	0.27	22.70	Cont'd	Cont'd	1978	MPC01
		0.62			69.3	2.016	0.611	CT	1.008	0.30	24.50			1978	MPC01
		0.62			69.3	2.018	0.609	CT	0.989	0.28	24.20			1978	MPC01
		0.62			71.2	2.016	0.624	CT	1.008	0.27	23.70			1978	MPC01
		0.62			71.2	2.015	0.625	CT	1.068	0.28	24.90			1978	MPC01
		0.62			71.2	1.984	0.625	CT	0.992	0.27	23.70			1978	MPC01
T7651	Plate	0.50	82	L-T	62.3	1.000	0.502	CT	0.527	0.33	22.50	23.3	0.4	1973	86213
		0.50			62.3	1.000	0.502	CT	0.531	0.36	23.60			1973	86213
		0.50			62.3	1.000	0.502	CT	0.516	0.36	23.60			1973	86213
		0.50			64.5	1.000	0.503	CT	0.516	0.33	23.40			1973	86213
		0.50			64.5	1.000	0.503	CT	0.517	0.33	23.50			1973	86213
		0.50			64.5	1.000	0.503	CT	0.515	0.33	23.40			1973	86213
T7651	Plate	0.50	82	T-L	63.0	1.000	0.502	CT	0.538	0.29	21.40	21.8	0.4	1973	86213
		0.50			64.8	1.000	0.502	CT	0.510	0.29	22.20			1973	86213
		0.50			64.8	1.000	0.502	CT	0.516	0.29	22.20			1973	86213
		0.50			64.8	1.000	0.502	CT	0.501	0.28	21.50			1973	86213
T7651	Plate	0.50	84	L-T	61.0	1.000	0.494	CT	0.514	0.40	24.50	25.9	1.1	1973	86213
		0.62			62.8	1.500	0.612	CT	0.773	0.41	25.30			1973	86213
		0.62			62.8	1.500	0.612	CT	0.787	0.41	25.40			1973	86213
		0.62			63.2	1.500	0.603	CT	0.768	0.37	24.20			1973	86213
		0.62			63.7	1.500	0.615	CT	0.778	0.47	27.60			1973	86213
		0.62			63.7	1.500	0.614	CT	0.778	0.45	27.10			1973	86213

TABLE 8.10.2.1 (CONTINUED)

ALUMINUM 7075 (ALCLAD) K_{Ic}

CONDITION	PRODUCT FORM	PRODUCT THICK (in.)	TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN WIDTH (in.) W	SPECIMEN THICK (in.) B	SPECIMEN DESIGN	CRACK LENGTH (in.) A	$2.5 \cdot (K_{Ic}/TYS)^2$ (in.)	K_{Ic} K_{Ic} (Ksi√in.)	K_{Ic} K_{Ic} MEAN	K_{Ic} STAN DEV	DATE	REFER
T7651 Cont'd	Plate Cont'd	0.50	84 Cont'd	L-T Cont'd	64.0	1.000	0.505	CT	0.532	0.43	26.50	Cont'd	Cont'd	1973	86213
		0.62			64.9	1.500	0.602	CT	0.755	0.40	25.90			1973	86213
		0.62			64.9	1.500	0.601	CT	0.791	0.41	26.20			1973	86213
T7651	Plate	0.50	84	T-L	61.2	1.000	0.494	CT	0.527	0.34	22.70	23.2	1.0	1973	86213
		0.50			61.2	1.000	0.494	CT	0.518	0.34	22.50			1973	86213
		0.50			61.2	1.000	0.494	CT	0.517	0.33	22.30			1973	86213
		0.62			62.4	1.500	0.603	CT	0.771	0.33	22.50			1973	86213
		0.62			62.4	1.500	0.603	CT	0.767	0.33	22.70			1973	86213
		0.62			63.0	1.500	0.612	CT	0.779	0.40	25.30			1973	86213
		0.62			63.0	1.500	0.615	CT	0.827	0.40	25.20			1973	86213
		0.62			64.0	1.500	0.602	CT	0.771	0.35	23.80			1973	86213
		0.62			64.0	1.500	0.601	CT	0.755	0.32	22.90			1973	86213
		0.50			64.4	1.000	0.506	CT	0.503	0.33	23.50			1973	86213
		0.50			64.4	1.000	0.506	CT	0.520	0.31	22.60			1973	86213
		0.62			64.6	1.500	0.612	CT	0.764	0.31	22.60			1973	86213
		0.62			64.6	1.500	0.612	CT	0.797	0.33	23.30			1973	86213
T7651	Plate	0.62	86	L-T	59.3	1.500	0.611	CT	0.771	0.47	25.70	25.5	1.2	1973	86213
		0.62			59.3	1.500	0.611	CT	0.818	0.48	25.90			1973	86213
		0.50			59.6	1.000	0.500	CT	0.534	0.40	23.80			1973	86213
		0.50			59.6	1.000	0.500	CT	0.515	0.40	23.70			1973	86213
		0.50			59.6	1.000	0.500	CT	0.514	0.40	23.70			1973	86213
		0.62			62.6	1.500	0.615	CT	0.773	0.43	26.00			1973	86213

TABLE 8.10.2.1 (CONCLUDED)

ALUMINUM 7075 (ALCLAD) K_{Ic}

CONDITION	PRODUCT		TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN			CRACK LENGTH (in.) A	2.5 * $(K_{Ic}/TYS)^2$ (in.)	K_{Ic}			DATE	REFER
	FORM	THICK (in.)				WIDTH (in.) W	THICK (in.) B	DESIGN			K_{Ic} (Ksi√in.)	K_{Ic} MEAN	STAN DEV		
T7651 Cont'd	Plate Cont'd	0.62	86 Cont'd	L-T Cont'd	62.6	1.500	0.615	CT	0.787	0.43	26.00	Cont'd	Cont'd	1973	86213
		0.62			63.0	1.500	0.620	CT	0.788	0.46	27.00			1973	86213
		0.62			63.0	1.500	0.622	CT	0.750	0.48	27.50			1973	86213
		0.62			64.2	1.500	0.596	CT	0.780	0.42	26.20			1973	86213
		0.62			65.8	1.500	0.615	CT	0.762	0.38	25.70			1973	86213
		0.62			65.8	1.500	0.615	CT	0.781	0.37	25.30			1973	86213
T7651	Plate	0.62	86	T-L	59.2	1.500	0.615	CT	0.768	0.40	23.80	23.1	1.1	1973	86213
		0.62			59.2	1.500	0.615	CT	0.775	0.41	24.10			1973	86213
		0.62			59.4	1.500	0.596	CT	0.771	0.39	23.40			1973	86213
		0.62			59.4	1.500	0.596	CT	0.773	0.37	22.70			1973	86213
		0.62			60.6	1.500	0.611	CT	0.796	0.38	23.50			1973	86213
		0.62			60.6	1.500	0.611	CT	0.759	0.36	23.10			1973	86213
		0.50			61.0	1.000	0.500	CT	0.507	0.34	22.50			1973	86213
		0.50			61.0	1.000	0.500	CT	0.512	0.31	21.60			1973	86213
		0.50			61.0	1.000	0.500	CT	0.508	0.30	21.30			1973	86213
		0.62			63.5	1.500	0.621	CT	0.768	0.36	24.20			1973	86213
		0.62			63.5	1.500	0.620	CT	0.780	0.39	25.10			1973	86213
		0.62			65.0	1.500	0.615	CT	0.763	0.30	22.50			1973	86213
		0.62			65.0	1.500	0.615	CT	0.762	0.30	22.70			1973	86213

TABLE 8.10.2.2

ALUMINUM 7075 (ALCLAD) K_C

CONDITION HEAT TREAT	PRODUCT		TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN		CRACK LENGTH		GROSS STRESS		K_{app}			K_C			DATE	REFER
	FORM	THICK (in.)				WIDTH (in.) W	THICK (in.) B	INIT (in.) $2a_o$	FINAL (in.) $2a_f$	ONSET (Ksi) σ_o	MAX (Ksi) σ_{Max}	K_{app} (Ksi√in)	K_{app} MEAN	STAN DEV	K_C (Ksi√in)	K_C MEAN	STAN DEV		
BUCKLING OF CRACK EDGES RESTRAINED																			
T6	Sheet	0.08	R.T.	L-T	73.1	5.900	0.079	1.580	1.970	---	36.70	60.51	53.5	3.2	69.39	60.1	5.1	1965	70485
		0.08			73.1	5.900	0.079	1.580	---	---	32.10	52.93			---			1965	70485
		0.08			73.1	5.900	0.079	0.790	0.980	---	47.40	53.39			59.83			1965	70485
		0.08			73.1	5.900	0.079	0.390	---	---	57.00	44.73*			---			1965	70485
		0.08			73.1	5.900	0.079	3.150	---	---	19.60	53.32			---			1965	70485
		0.08			73.1	5.900	0.079	0.790	0.980	38.80	42.80	48.21			54.02			1965	70485
		0.08			73.1	5.900	0.079	0.390	---	51.50	58.50	45.91*			---			1965	70485
		0.08			73.1	5.900	0.079	0.790	0.980	---	46.50	52.38			58.70			1965	70485
		0.08			73.1	5.900	0.079	3.150	---	---	20.10	54.69			---			1965	70485
		0.08			73.1	5.900	0.079	0.390	0.670	---	58.90	46.23*			60.91*			1965	70485
		0.08			73.1	5.900	0.079	3.150	3.420	19.50	19.80	53.87			58.60			1965	70485
		0.08			73.1	5.900	0.079	1.580	2.010	---	31.40	51.78			60.16			1965	70485
T6	Sheet	0.08	R.T.	L-T	73.1	11.800	0.079	4.720	5.860	19.20	21.00	63.57	61.5	5.8	75.57	70.1	7.2	1965	70485
		0.08			73.1	11.800	0.079	2.360	2.950	30.20	32.20	63.57			72.11			1965	70485
		0.08			73.1	11.800	0.079	0.980	1.380	42.10	48.80	60.81			72.46			1965	70485
		0.08			73.1	11.800	0.079	1.770	2.130	25.50	33.30	56.31			62.16			1965	70485
		0.08			73.1	11.800	0.079	0.980	1.260	41.60	46.40	57.82			65.74			1965	70485
		0.08			73.1	11.800	0.079	1.770	2.280	21.90	34.30	58.00			66.45			1965	70485
		0.08			73.1	11.800	0.079	2.360	2.600	25.90	32.30	63.77			67.30			1965	70485

* NOTE: NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STANDARD DEVIATION.

TABLE 8.10.2.2 (CONTINUED)

ALUMINUM 7075 (ALCLAD) K_C

CONDITION HEAT TREAT	PRODUCT FORM	PRODUCT THICK (in.)	TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN WIDTH (in.) W	SPECIMEN THICK (in.) B	CRACK LENGTH INIT (in.) $2a_o$	CRACK LENGTH FINAL (in.) $2a_f$	GROSS STRESS ONSET (Ksi) σ_o	GROSS STRESS MAX (Ksi) σ_{Max}	K_{app} (Ksi√in)	K_{app} MEAN	K_{app} STAN DEV	K_C (Ksi√in)	K_C MEAN	K_C STAN DEV	DATE	REFER
BUCKLING OF CRACK EDGES RESTRAINED																			
T6 Cont'd	Sheet Cont'd	0.08	R.T. Cont'd	L-T Cont'd	73.1	11.800	0.079	3.540	4.210	18.60	32.30	80.69	Cont'd	Cont'd	90.25	Cont'd	Cont'd	1965	70485
		0.08			73.1	11.800	0.079	3.540	3.940	18.00	23.00	57.46			61.50			1965	70485
		0.08			73.1	11.800	0.080	0.990	1.260	36.70	45.60	57.11			64.61			1966	65697
		0.08			73.1	11.800	0.080	2.360	3.340	17.60	30.80	60.81			74.25			1966	65697
		0.08			73.1	11.800	0.080	2.360	2.800	24.20	32.20	63.57			69.97			1966	65697
		0.08			73.1	11.800	0.080	2.360	3.150	---	33.20	65.55			77.27			1966	65697
		0.08			73.1	11.800	0.080	2.360	2.840	23.20	28.30	55.87			62.00			1966	65697
		0.08			73.1	11.800	0.080	0.990	1.320	34.30	49.20	61.62			71.40			1966	65697
		0.08			73.1	11.800	0.080	0.990	1.280	35.30	46.00	57.61			65.70			1966	65697
		0.08			73.1	11.800	0.080	0.990	1.400	21.00	49.00	61.37			73.30			1966	65697
T6	Sheet	0.01	R.T.	L-T	67.4	15.000	0.009	7.500	9.380	---	17.80	72.66	74.5	2.6	91.70	88.8	4.1	1966	86734
		0.01			67.4	15.000	0.009	7.500	8.480	---	18.70	76.33			85.92			1966	86734
T6	Sheet	0.08	R.T.	L-T	73.1	23.600	0.079	1.580	1.890	35.60	39.70	62.72	62.4	9.8	68.68	69.3	10.4	1965	70485
		0.08			73.1	23.600	0.079	0.790	1.300	---	45.50	50.72			65.14			1965	70485
		0.08			73.1	23.600	0.079	4.720	5.000	16.60	22.70	63.38			65.44			1965	70485
		0.08			73.1	23.600	0.079	6.300	6.700	14.20	18.90	62.21			64.55			1965	70485
		0.08			73.1	23.600	0.079	0.630	0.870	46.10	48.00	47.77			56.16			1965	70485
		0.08			73.1	23.600	0.079	3.940	5.200	22.20	28.90	73.16			85.16			1965	70485

* NOTE: NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STANDARD DEVIATION.

TABLE 8.10.2.2 (CONTINUED)

ALUMINUM 7075 (ALCLAD) K_C

CONDITION HEAT TREAT	PRODUCT		TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN		CRACK LENGTH		GROSS STRESS		K_{app}			K_C			DATE	REFER
	FORM	THICK (in.)				WIDTH (in.) W	THICK (in.) B	INIT (in.) $2a_o$	FINAL (in.) $2a_f$	ONSET (Ksi) σ_o	MAX (Ksi) σ_{Max}	K_{app} (Ksi√in)	K_{app} MEAN	STAN DEV	K_c (Ksi√in)	K_c MEAN	STAN DEV		
BUCKLING OF CRACK EDGES RESTRAINED																			
T6 Cont'd	Sheet Cont'd	0.08	R.T. Cont'd	L-T Cont'd	73.1	23.600	0.079	1.180	1.380	38.00	45.10	61.50	Cont'd	Cont'd	66.54	Cont'd	Cont'd	1965	70485
		0.08			73.1	23.600	0.079	1.180	1.380	44.30	46.50	63.41			68.61			1965	70485
		0.08			73.1	23.600	0.079	4.720	5.000	17.10	20.60	57.52			59.38			1965	70485
		0.08			73.1	23.600	0.079	6.300	6.850	15.90	21.20	69.78			73.39			1965	70485
		0.08			73.1	23.600	0.079	1.580	2.240	---	29.90	47.23			56.40			1965	70485
		0.08			73.1	23.600	0.079	1.180	1.540	38.20	45.10	61.50			70.33			1965	70485
		0.08			73.1	23.600	0.079	2.360	2.680	28.50	33.00	63.93			68.25			1965	70485
		0.08			73.1	23.600	0.079	1.580	2.560	33.80	37.20	58.77			75.14			1965	70485
		0.08			73.1	23.600	0.079	2.360	2.950	24.50	32.20	62.38			69.99			1965	70485
		0.08			73.1	23.600	0.079	3.150	3.580	22.60	29.30	65.90			70.48			1965	70485
		0.08			73.1	23.600	0.079	0.790	0.990	---	47.50	52.95			59.30			1965	70485
		0.08			73.1	23.600	0.079	3.150	3.460	24.00	29.70	66.80			70.17			1965	70485
		0.08			73.1	23.600	0.079	3.150	3.700	21.00	28.30	63.65			69.28			1965	70485
		0.08			73.1	23.600	0.079	11.80	13.220	10.00	18.10	92.67			103.33			1965	70485
BUCKLING OF CRACK EDGES NOT RESTRAINED																			
T6	Sheet	0.04	R.T.	L-T	69.8	7.500	0.040	3.000	---	---	18.00	43.44	47.3	3.9	---	---	---	1966	86734
		0.04			69.8	7.500	0.040	3.000	---	---	21.20	51.17			---			1966	86734
		0.04			69.8	7.500	0.040	3.000	---	---	19.65	47.42			---			1966	86734

* NOTE: NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STANDARD DEVIATION.

TABLE 8.10.2.2 (CONTINUED)

ALUMINUM 7075 (ALCLAD) K_C

CONDITION HEAT TREAT	PRODUCT		TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN		CRACK LENGTH		GROSS STRESS		K_{app}			K_C			DATE	REFER
	FORM	THICK (in.)				WIDTH (in.) W	THICK (in.) B	INIT (in.) $2a_o$	FINAL (in.) $2a_f$	ONSET (Ksi) σ_o	MAX (Ksi) σ_{Max}	K_{app} (Ksi$\sqrt{in}$)	K_{app} MEAN	STAN DEV	K_C (Ksi$\sqrt{in}$)	K_C MEAN	STAN DEV		
BUCKLING OF CRACK EDGES NOT RESTRAINED																			
T6	Sheet	0.06	R.T.	L-T	69.1	7.500	0.064	3.000	---	---	34.50	83.26*	52.6	3.1	---	---	---	1966	86734
		0.06			69.1	7.500	0.064	1.500	---	---	34.80	54.77			---			1966	86734
		0.06			69.2	7.500	0.064	3.000	---	---	20.90	50.44			---			1966	86734
T6	Sheet	0.12	R.T.	L-T	68.9	7.500	0.125	3.000	---	---	22.90	55.27	---	---	---	---	---	1966	86734
T6	Sheet	0.04	R.T.	L-T	63.0	9.000	0.040	0.580	0.720	53.60	56.10	53.68*	51.4	5.7	59.90*	55.0	7.3	1965	62311
		0.04			63.0	9.000	0.040	0.540	0.680	52.60	55.40	51.14*			57.46*			1965	62311
		0.04			63.0	9.000	0.040	5.480	5.840	6.90	11.40	44.05			47.70			1965	62311
		0.04			63.0	9.000	0.040	3.650	4.030	11.10	19.90	53.15			57.33			1965	62311
		0.04			63.0	9.000	0.040	5.460	5.740	6.90	11.60	44.63			47.45			1965	62311
		0.04			63.0	9.000	0.040	5.560	5.740	10.70	11.80	46.39			48.27			1965	62311
		0.04			63.0	9.000	0.040	5.480	5.680	9.70	11.30	43.67			45.61			1965	62311
		0.04			63.0	9.000	0.040	1.800	2.030	31.90	35.10	60.52			64.72			1965	62311
		0.04			63.0	9.000	0.040	1.840	1.960	15.80	28.80	50.26			52.06			1965	62311
		0.04			63.0	9.000	0.040	3.640	4.180	17.10	20.70	55.17			61.43			1965	62311
		0.04			63.0	9.000	0.040	0.290	0.600	62.90	64.20	43.36*			62.50*			1965	62311
		0.04			63.0	9.000	0.040	0.260	0.580	64.00	64.90	41.50*			62.11*			1965	62311
		0.04			63.0	9.000	0.040	1.790	2.350	30.60	33.80	58.10			67.81			1965	62311
		0.04			63.0	9.000	0.040	3.960	4.120	19.20	20.00	56.83			58.66			1965	62311
		0.04			63.0	9.000	0.040	0.780	0.960	89.90	47.40	52.71*			58.62*			1965	62311

* NOTE: NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STANDARD DEVIATION.

TABLE 8.10.2.2 (CONTINUED)

ALUMINUM 7075 (ALCLAD) K_C

CONDITION HEAT TREAT	PRODUCT FORM	PRODUCT THICK (in.)	TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN WIDTH (in.) W	SPECIMEN THICK (in.) B	CRACK LENGTH INIT (in.) $2a_o$	CRACK LENGTH FINAL (in.) $2a_f$	GROSS STRESS ONSET (Ksi) σ_o	GROSS STRESS MAX (Ksi) σ_{Max}	K_{app} (Ksi$\sqrt{in}$)	K_{app} MEAN	K_{app} STAN DEV	K_C (Ksi$\sqrt{in}$)	K_C MEAN	K_C STAN DEV	DATE	REFER
BUCKLING OF CRACK EDGES NOT RESTRAINED																			
		0.04			63.0	9.000	0.040	3.640	4.030	10.60	19.60	52.24			56.47			1965	62311
T6 Cont'd	Sheet Cont'd	0.04	R.T. Cont'd	L-T Cont'd	63.0	9.000	0.040	0.790	1.130	42.20	46.70	52.27*	Cont'd	Cont'd	62.83*	Cont'd	Cont'd	1965	62311
		0.04			63.0	9.000	0.040	1.860	1.940	15.80	29.30	51.44			52.66			1965	62311
		0.09			63.0	9.000	0.091	3.540	3.740	23.20	27.50	71.83			74.78			1965	62311
		0.09			63.0	9.000	0.091	3.680	3.800	25.60	26.50	71.20			72.93			1965	62311
		0.09			63.0	9.000	0.091	---	1.960	---	38.00	---			68.70			1965	62311
		0.09			63.0	9.000	0.091	1.780	2.220	29.10	35.70	61.18			69.28			1965	62311
		0.09			63.0	9.000	0.091	5.360	5.540	14.00	17.20	64.79			67.33			1965	62311
		0.09			63.0	9.000	0.091	5.320	5.600	16.50	16.70	62.38			66.24			1965	62311
		0.09			63.0	9.000	0.091	3.840	4.080	24.80	25.50	70.74			74.20			1965	62311
		0.09			63.0	9.000	0.091	5.320	5.440	14.00	16.70	62.38			63.98			1965	62311
T6	Sheet	0.09	R.T.	L-T	63.0	9.000	0.091	1.960	2.270	36.00	36.90	66.71	64.5	6.1	72.54	70.0	3.6	1965	62311
		0.09			63.0	9.000	0.091	1.780	2.200	28.20	36.00	61.69			69.50			1965	62311
		0.09			63.0	9.000	0.091	0.750	1.080	39.50	46.50	50.69*			61.11*			1965	62311
		0.09			63.0	9.000	0.091	3.500	3.960	23.20	25.90	67.10			73.59			1965	62311
		0.09			63.0	9.000	0.091	0.290	0.700	59.70	61.10	41.26*			64.31*			1965	62311
		0.09			63.0	9.000	0.091	0.540	0.900	47.60	51.50	47.54*			61.61*			1965	62311
		0.09			63.0	9.000	0.091	0.540	0.800	48.30	51.60	47.63*			58.13*			1965	62311
		0.09			63.0	9.000	0.091	0.780	1.170	39.60	44.40	49.38			60.83*			1965	62311
		0.09			63.0	9.000	0.091	5.360	5.500	15.90	17.20	64.79			66.75			1965	62311

* NOTE: NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STANDARD DEVIATION.

TABLE 8.10.2.2 (CONTINUED)

ALUMINUM 7075 (ALCLAD) K_C

CONDITION HEAT TREAT	PRODUCT FORM	PRODUCT THICK (in.)	TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN WIDTH (in.) W	SPECIMEN THICK (in.) B	CRACK LENGTH INIT (in.) $2a_o$	CRACK LENGTH FINAL (in.) $2a_f$	GROSS STRESS ONSET (Ksi) σ_o	GROSS STRESS MAX (Ksi) σ_{Max}	K_{app} (Ksi√in)	K_{app} MEAN	K_{app} STAN DEV	K_c (Ksi√in)	K_c MEAN	K_c STAN DEV	DATE	REFER
BUCKLING OF CRACK EDGES NOT RESTRAINED																			
T6	Sheet	0.02	R.T.	L-T	70.3	15.000	0.020	7.500	8.640	---	17.00	69.39	68.8	0.9	79.67	82.4	3.9	1966	86734
		0.02			70.3	15.000	0.020	7.500	9.300	---	16.70	68.17			85.14			1966	86734
T6	Sheet	0.03	R.T.	L-T	68.8	15.000	0.030	7.500	8.520	---	19.40	79.19	75.3	5.5	89.58	82.9	9.4	1966	86734
		0.03			68.8	15.000	0.030	7.500	8.050	---	17.50	71.43			76.30			1966	86734
T6	Sheet	0.04	R.T.	L-T	63.0	20.000	0.040	---	2.470	---	27.50	---	---	---	54.68	51.9	3.1	1965	62311
		0.04			63.0	20.000	0.040	---	10.530	---	9.20	---			45.47			1965	62311
		0.04			63.0	20.000	0.040	---	1.960	---	29.60	---			52.25			1965	62311
		0.04			63.0	20.000	0.040	---	6.100	---	16.00	---			52.58			1965	62311
		0.04			63.0	20.000	0.040	---	2.080	---	32.10	---			58.41			1965	62311
		0.04			63.0	20.000	0.040	---	2.420	---	27.20	---			53.52			1965	62311
		0.04			63.0	20.000	0.040	---	2.440	---	26.30	---			51.97			1965	62311
		0.04			63.0	20.000	0.040	---	6.220	---	15.30	---			50.89			1965	62311
		0.04			63.0	20.000	0.040	---	10.530	---	11.10	---			53.86			1965	62311
		0.04			63.0	20.000	0.040	---	3.860	---	20.30	---			51.17			1965	62311
		0.04			63.0	20.000	0.040	---	7.300	---	13.00	---			48.03			1965	62311
		0.04			63.0	20.000	0.040	---	7.300	---	13.20	---			48.77			1965	62311
		0.04			63.0	20.000	0.040	---	2.400	---	26.90	---			52.70			1965	62311
		0.04			63.0	20.000	0.040	---	3.940	---	20.50	---			52.26			1965	62311

* NOTE: NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STANDARD DEVIATION.

TABLE 8.10.2.2 (CONTINUED)

ALUMINUM 7075 (ALCLAD) K_C

CONDITION HEAT TREAT	PRODUCT FORM	PRODUCT THICK (in.)	TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN WIDTH (in.) W	SPECIMEN THICK (in.) B	CRACK LENGTH INIT (in.) $2a_o$	CRACK LENGTH FINAL (in.) $2a_f$	GROSS STRESS ONSET (Ksi) σ_o	GROSS STRESS MAX (Ksi) σ_{Max}	K_{app} (Ksi$\sqrt{in}$)	K_{app} MEAN	K_{app} STAN DEV	K_c (Ksi$\sqrt{in}$)	K_c MEAN	K_c STAN DEV	DATE	REFER
BUCKLING OF CRACK EDGES NOT RESTRAINED																			
T6	Sheet	0.09	R.T.	L-T	63.0	20.000	0.091	1.840	2.380	17.60	34.30	58.62	56.4	2.9	66.90	61.8	3.7	1965	62311
		0.09			63.0	20.000	0.091	3.660	4.150	15.70	24.20	59.25			63.48			1965	62311
		0.09			63.0	20.000	0.091	7.070	7.780	10.80	15.20	54.95			58.71			1965	62311
		0.09			63.0	20.000	0.091	5.400	6.070	12.10	19.00	57.96			62.24			1965	62311
		0.09			63.0	20.000	0.091	5.470	6.150	12.40	18.60	57.18			61.43			1965	62311
		0.09			63.0	20.000	0.091	1.860	2.400	19.20	32.70	56.19			64.06			1965	62311
		0.09			63.0	20.000	0.091	3.650	4.280	15.40	24.60	60.14			65.65			1965	62311
		0.09			63.0	20.000	0.091	10.05	11.180	6.60	11.00	52.08			57.68			1965	62311
		0.09			63.0	20.000	0.091	7.070	8.250	10.80	15.50	56.03			62.49			1965	62311
		0.09			63.0	20.000	0.091	10.07	10.850	6.90	10.80	51.22			54.95			1965	62311
T6	Sheet	0.04	R.T.	L-T	71.1	30.000	0.039	15.00	---	---	14.00	80.81	64.9	16.9	---	---	---	1966	86734
		0.04			71.1	30.000	0.039	15.00	---	---	13.60	78.51			---			1966	86734
		0.04			69.8	30.000	0.040	12.00	---	---	16.90	81.57			---			1966	86734
		0.04			72.7	30.000	0.040	6.000	---	---	15.64	49.23			---			1966	86734
		0.04			72.9	30.000	0.040	12.00	---	---	10.15	48.99			---			1966	86734
		0.04			73.4	30.000	0.040	3.000	---	---	23.10	50.46			---			1966	86734
T6	Sheet	0.06	R.T.	L-T	71.8	30.000	0.060	15.00	19.060	---	12.70	73.31	73.9	0.8	94.39	90.0	6.2	1966	86734
		0.06			71.8	30.000	0.060	15.00	17.300	---	12.90	74.46			85.61			1966	86734
T6	Sheet	0.08	R.T.	L-T	72.9	30.000	0.081	15.00	18.420	---	8.80	50.80	51.4	0.8	62.71	70.3	10.7	1966	86734
		0.08			72.9	30.000	0.081	15.00	21.200	---	9.00	51.95			77.89			1966	86734

* NOTE: NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STANDARD DEVIATION.

TABLE 8.10.2.2 (CONTINUED)

ALUMINUM 7075 (ALCLAD) K_C

CONDITION HEAT TREAT	PRODUCT FORM	PRODUCT THICK (in.)	TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN WIDTH (in.) W	SPECIMEN THICK (in.) B	CRACK LENGTH INIT (in.) $2a_o$	CRACK LENGTH FINAL (in.) $2a_f$	GROSS STRESS ONSET (Ksi) σ_o	GROSS STRESS MAX (Ksi) σ_{Max}	K_{app} (Ksi$\sqrt{in}$)	K_{app} MEAN	K_{app} STAN DEV	K_C (Ksi$\sqrt{in}$)	K_C MEAN	K_C STAN DEV	DATE	REFER
BUCKLING OF CRACK EDGES NOT RESTRAINED																			
T6	Sheet	0.09	82	L-T	69.0	3.000	0.089	1.120	2.016	---	33.90	49.27	49.5	0.5	85.94*	---	---	1973	86213
		0.09			69.0	3.000	0.089	1.230	2.141	---	31.80	49.43			88.38*			1973	86213
		0.09			69.0	3.000	0.089	1.170	2.140	---	33.60	50.36			93.38*			1973	86213
		0.09			69.2	3.000	0.089	1.170	2.005	---	32.70	49.01			82.20*			1973	86213
		0.09			69.2	3.000	0.089	1.210	2.062	---	32.40	49.76			84.91*			1973	86213
		0.09			69.2	3.000	0.089	1.230	2.162	---	31.70	49.27			89.63*			1973	86213
T6	Sheet	0.09	83	L-T	69.0	3.000	0.089	1.210	2.058	---	32.50	49.91	49.5	0.6	84.92*	---	---	1973	86213
		0.09			69.0	3.000	0.089	1.220	2.115	---	31.80	49.13			86.63*			1973	86213
T6	Sheet	0.12	83	L-T	71.0	3.000	0.125	1.210	1.947	---	34.00	52.21*	---	---	82.10*	---	---	1973	86213
		0.12			71.0	3.000	0.126	1.190	2.100	---	34.60	52.49*			93.27*			1973	86213
		0.12			71.0	3.000	0.126	1.250	2.081	---	33.90	53.33*			90.02*			1973	86213
		0.12			71.7	3.000	0.126	1.190	1.964	---	35.90	54.47*			87.76*			1973	86213
		0.12			71.7	3.000	0.126	1.230	2.059	---	34.40	53.47*			89.89*			1973	86213
		0.12			71.7	3.000	0.126	1.220	2.021	---	34.60	53.46*			87.96*			1973	86213
T6	Sheet	0.09	84	L-T	69.7	3.000	0.089	1.160	2.116	---	33.30	49.60	49.2	0.4	90.85*	---	---	1973	86213
		0.09			69.7	3.000	0.089	1.260	2.178	---	30.80	48.75			88.20*			1973	86213
		0.09			69.7	3.000	0.089	1.240	2.146	---	31.50	49.26			87.95*			1973	86213
T6	Sheet	0.12	84	L-T	71.8	3.000	0.126	1.230	2.024	---	34.10	53.00*	---	---	86.94*	---	---	1973	86213
		0.12			71.8	3.000	0.126	1.180	2.018	---	34.70	52.33			88.09*			1973	86213
		0.12			71.8	3.000	0.126	1.370	2.227	---	31.60	53.40*			94.10*			1973	86213

* NOTE: NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STANDARD DEVIATION.

TABLE 8.10.2.2 (CONTINUED)

ALUMINUM 7075 (ALCLAD) K_C

CONDITION HEAT TREAT	PRODUCT FORM	PRODUCT THICK (in.)	TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN WIDTH (in.) W	SPECIMEN THICK (in.) B	CRACK LENGTH INIT (in.) $2a_o$	CRACK LENGTH FINAL (in.) $2a_f$	GROSS STRESS ONSET (Ksi) σ_o	GROSS STRESS MAX (Ksi) σ_{Max}	K_{app} (Ksi$\sqrt{in}$)	K_{app} MEAN	K_{app} STAN DEV	K_c (Ksi$\sqrt{in}$)	K_c MEAN	K_c STAN DEV	DATE	REFER
BUCKLING OF CRACK EDGES NOT RESTRAINED																			
T6	Sheet	0.16	84	L-T	73.4	3.000	0.160	1.207	2.539	---	29.90	45.81	49.1	3.2	121.98*	---	---	1973	86213
		0.16			73.4	3.000	0.160	1.210	1.994	---	30.30	46.53			75.63*			1973	86213
		0.16			73.4	3.000	0.160	1.203	1.943	---	30.10	46.00			72.48*			1973	86213
		0.16			70.4	3.000	0.164	1.157	1.726	---	35.90	53.35*			75.15*			1973	86213
		0.16			70.4	3.000	0.164	1.087	1.580	---	36.80	52.36*			70.47*			1973	86213
		0.16			70.4	3.000	0.164	1.200	1.747	---	35.00	53.42*			74.19*			1973	86213
		0.16			71.2	3.000	0.164	1.230	1.647	---	33.50	52.07			66.76*			1973	86213
		0.16			71.2	3.000	0.164	1.220	1.654	---	33.60	51.91			67.29*			1973	86213
		0.16			71.2	3.000	0.164	1.207	1.659	---	34.00	52.09			68.25*			1973	86213
T6	Sheet	0.04	R.T.	T-L	65.8	7.500	0.040	3.000	---	---	19.25	46.46	45.6	1.2	---	---	---	1966	86734
		0.04			66.2	7.500	0.040	3.000	---	---	18.54	44.75			---			1966	86734
T6	Sheet	0.01	R.T.	T-L	67.1	15.000	0.010	7.500	8.380	---	14.40	58.78	57.8	1.4	65.36	65.1	0.4	1966	86734
		0.01			67.1	15.000	0.010	7.500	8.590	---	13.90	56.74			64.74			1966	86734
T6	Sheet	0.02	R.T.	T-L	65.8	15.000	0.020	7.500	8.560	---	16.50	67.35	68.8	2.0	76.57	78.4	2.6	1966	86734
		0.02			65.8	15.000	0.020	7.500	8.610	---	17.20	70.21			80.31			1966	86734
T6	Sheet	0.03	R.T.	T-L	69.6	15.000	0.030	7.500	9.360	---	17.60	71.84	72.9	1.4	90.43	90.5	0.0	1966	86734
		0.03			69.6	15.000	0.030	7.500	9.150	---	18.10	73.88			90.49			1966	86734
T6	Sheet	0.04	R.T.	T-L	69.9	30.000	0.039	15.00	---	---	11.10	64.07	65.8	2.5	---	---	---	1966	86734
		0.04			69.9	30.000	0.039	15.00	---	---	11.70	67.54			---			1966	86734

* NOTE: NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STANDARD DEVIATION.

TABLE 8.10.2.2 (CONTINUED)

ALUMINUM 7075 (ALCLAD) K_C

CONDITION HEAT TREAT	PRODUCT		TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN		CRACK LENGTH		GROSS STRESS		K_{app}			K_C			DATE	REFER
	FORM	THICK (in.)				WIDTH (in.) W	THICK (in.) B	INIT (in.) $2a_o$	FINAL (in.) $2a_f$	ONSET (Ksi) σ_o	MAX (Ksi) σ_{Max}	K_{app} (Ksi$\sqrt{in}$)	K_{app} MEAN	STAN DEV	K_C (Ksi$\sqrt{in}$)	K_C MEAN	STAN DEV		
BUCKLING OF CRACK EDGES NOT RESTRAINED																			
T6	Sheet	0.06	R.T.	T-L	69.8	30.000	0.064	15.00	16.760	---	11.80	68.12	68.1	0.0	75.74	75.5	0.4	1966	86734
		0.06			69.8	30.000	0.064	15.00	16.640	---	11.80	68.12			75.18			1966	86734
T6	Sheet	0.08	R.T.	T-L	69.2	30.000	0.081	15.00	16.800	---	8.20	47.33	47.0	0.4	52.76	52.0	1.0	1966	86734
		0.08			69.2	30.000	0.081	15.00	16.550	---	8.10	46.76			51.33			1966	86734
T6	Sheet	0.09	82	T-L	67.2	3.000	0.089	1.320	2.056	---	27.10	44.46	44.6	0.2	70.71*	---	---	1973	86213
		0.09			67.2	3.000	0.089	1.200	1.862	---	29.30	44.72			66.89*			1973	86213
		0.09			67.2	3.000	0.089	1.270	1.960	---	28.10	44.74			68.50*			1973	86213
T6	Sheet	0.09	83	T-L	67.4	3.000	0.088	1.290	1.962	---	27.40	44.15	43.4	0.4	66.89*	---	---	1973	86213
		0.09			67.4	3.000	0.088	1.250	1.990	---	27.70	43.58			68.95*			1973	86213
		0.09			67.4	3.000	0.088	1.240	2.025	---	27.60	43.16			70.37*			1973	86213
		0.09			67.7	3.000	0.089	1.320	1.987	---	26.60	43.64			66.03*			1973	86213
		0.09			67.7	3.000	0.089	1.200	2.064	---	28.20	43.04			74.01*			1973	86213
		0.09			67.7	3.000	0.089	1.280	2.065	---	26.90	43.09			70.60*			1973	86213
T6	Sheet	0.12	83	T-L	69.4	3.000	0.125	1.330	2.026	---	28.90	47.69	46.9	0.8	73.79*	---	---	1973	86213
		0.12			69.4	3.000	0.125	1.250	2.052	---	30.40	47.82			79.09*			1973	86213
		0.12			69.6	3.000	0.125	1.210	1.894	---	29.90	45.92			69.71*			1973	86213
		0.12			69.4	3.000	0.127	1.240	1.902	---	30.00	46.91			70.32*			1973	86213
		0.12			69.6	3.000	0.127	1.170	1.821	---	31.40	47.06			69.76*			1973	86213
		0.12			69.6	3.000	0.128	1.250	1.991	---	29.40	46.25			73.18*			1973	86213

* NOTE: NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STANDARD DEVIATION.

TABLE 8.10.2.2 (CONCLUDED)

ALUMINUM 7075 (ALCLAD) K_C

CONDITION HEAT TREAT	PRODUCT		TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN		CRACK LENGTH		GROSS STRESS		K_{app}			K_C			DATE	REFER
	FORM	THICK (in.)				WIDTH (in.) W	THICK (in.) B	INIT (in.) $2a_o$	FINAL (in.) $2a_f$	ONSET (Ksi) σ_o	MAX (Ksi) σ_{Max}	K_{app} (Ksi$\sqrt{in}$)	K_{app} MEAN	STAN DEV	K_C (Ksi$\sqrt{in}$)	K_C MEAN	STAN DEV		
BUCKLING OF CRACK EDGES NOT RESTRAINED																			
T6	Sheet	0.09	84	T-L	69.0	3.000	0.089	1.270	1.989	---	27.20	43.31	43.5	0.1	67.61*	---	---	1973	86213
		0.09			69.0	3.000	0.089	1.220	1.871	---	28.20	43.57			64.72*			1973	86213
		0.09			69.0	3.000	0.089	1.230	2.003	---	28.00	43.52			70.28*			1973	86213
T6	Sheet	0.12	84	T-L	69.1	3.000	0.125	1.250	1.932	---	30.60	48.14	47.3	0.8	73.19*	---	---	1973	86213
		0.12			69.1	3.000	0.126	1.300	1.925	---	29.10	47.17			69.22*			1973	86213
		0.12			69.1	3.000	0.126	1.350	2.031	---	27.90	46.59			71.44*			1973	86213
T6	Sheet	0.16	84	T-L	70.6	3.000	0.160	1.197	1.590	---	27.20	41.42	44.0	2.9	52.40*	49.7	0.6	1973	86213
		0.16			70.6	3.000	0.160	1.280	1.683	---	24.60	39.40			50.12			1973	86213
		0.16			70.6	3.000	0.160	1.230	1.568	---	25.90	40.26			49.24			1973	86213
		0.16			69.2	3.000	0.163	1.230	1.981	---	30.20	46.94			74.65*			1973	86213
		0.16			69.2	3.000	0.163	1.200	1.991	---	29.80	45.49			74.18*			1973	86213
		0.16			69.6	3.000	0.163	1.207	1.589	---	29.70	45.50			57.14*			1973	86213
		0.16			69.2	3.000	0.164	1.201	1.906	---	30.30	46.25			71.21*			1973	86213
		0.16			69.6	3.000	0.164	1.057	1.470	---	32.30	45.10			57.92*			1973	86213
		0.16			69.6	3.000	0.164	1.173	1.542	---	30.70	46.07			57.46*			1973	86213
T6	Sheet	0.09	84	T-L	69.1	16.000	0.089	4.000	5.100	16.60	22.80	59.46	59.2	0.4	68.90	67.8	1.5	1973	86213
		0.09			69.1	16.000	0.090	4.000	4.920	18.10	22.60	58.94			66.76			1973	86213

* NOTE: NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STANDARD DEVIATION.

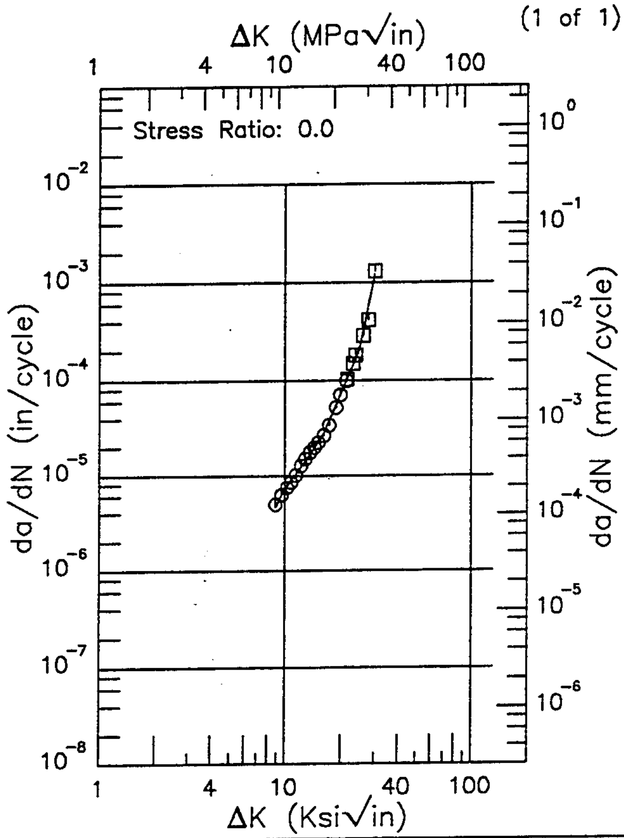
R

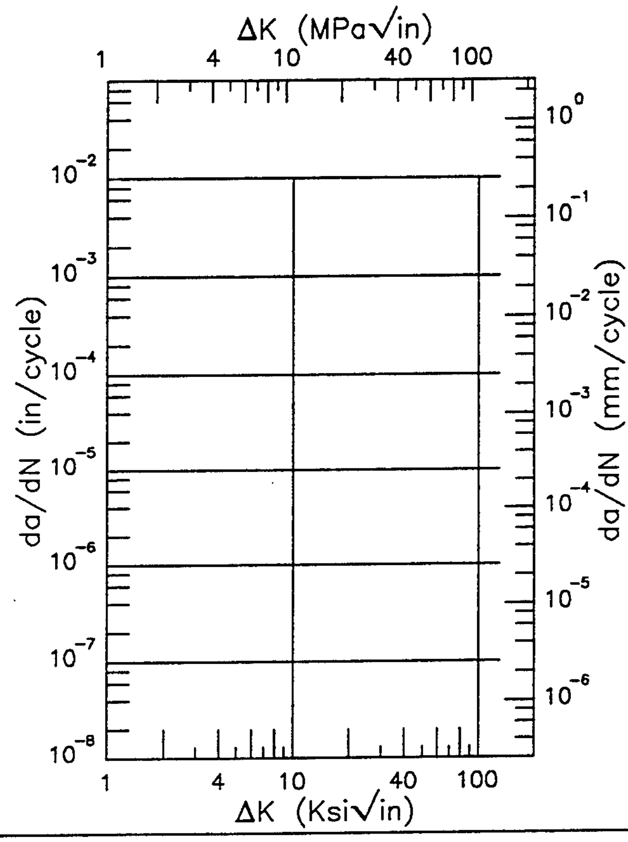
7075 (ALCLAD)

Condition/Ht: T6
Form: 0.09 in. Sheet
Specimen Type: CCP (max load specified)
Orientation: T–L
Frequency: 13.3 Hz
Environment: LAB AIR; RT

Yield Strength: 67.7 ksi
Ult. Strength: 77.8 ksi
Specimen Thk: 0.089 in.
Specimen Width: 4 in.
Ref: 86213

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
8.86 (min)	4.61
9.	4.92
10.	7.23
13.	14.5
16.	27.1
20.	73.6
25.	214.
30.	1152.
30.12 (max)	1224.

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error	Life Prediction Ratio Summary
7.70	0. .5 .8 1.25 2.

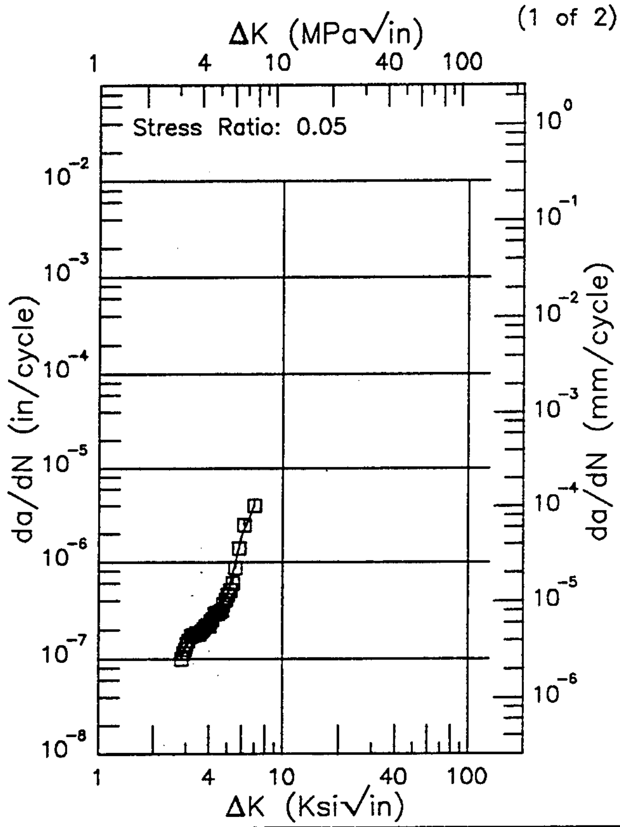
RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

Figure 8.10.3.1.1

Condition/Ht: T6
Form: Sheet
Specimen Type: CCP (max stress specified)
Orientation: T–L
Frequency: 30 Hz
Environment: LAB AIR; RT

Yield Strength: 47.2 ksi
Ult. Strength: 68.2 ksi
Specimen Thk: 0.09 in.
Specimen Width: 14 in.
Ref: EFM01

(1 of 2)



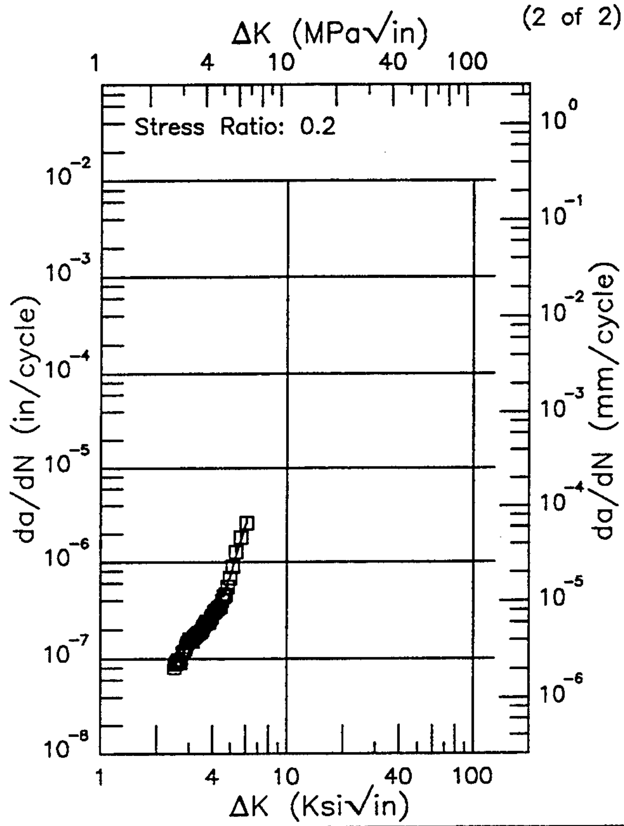
ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
2.83 (min)	0.107
3.	0.133
3.5	0.190
4.	0.230
5.	0.443
6.	1.91
6.96 (max)	3.90

RMS % Error 7.34

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

(2 of 2)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
2.49 (min)	0.0807
2.5	0.0818
3.	0.143
3.5	0.204
4.	0.267
5.	0.717
6.	2.50
6.09 (max)	2.54

RMS % Error 6.87

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

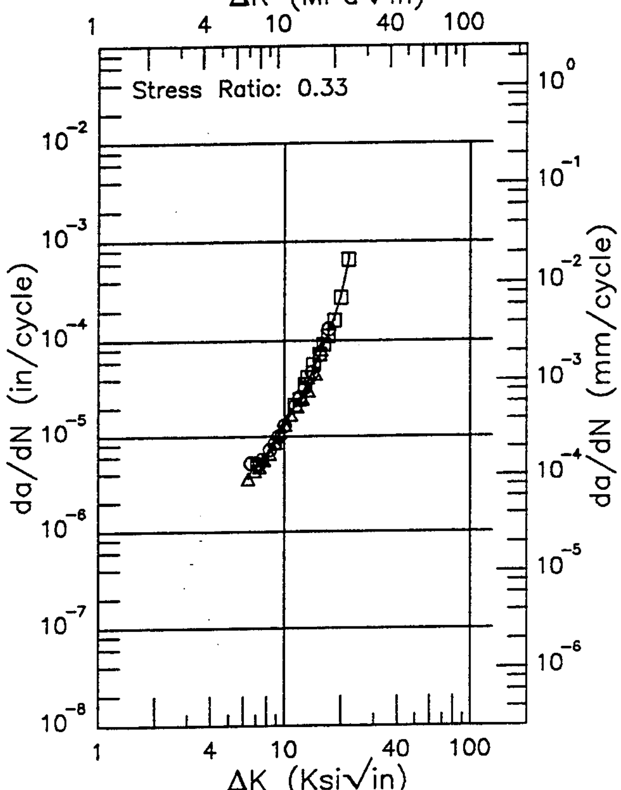
Figure 8.10.3.1.2

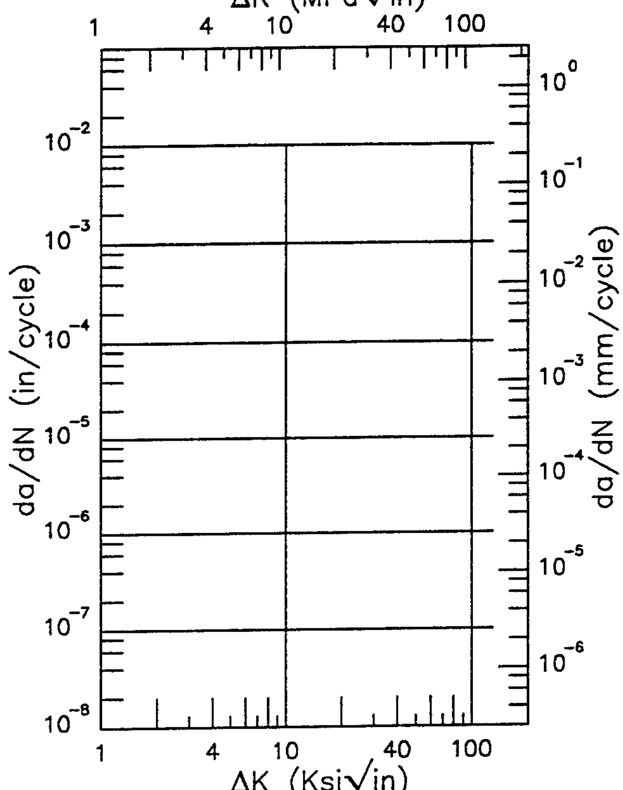
R

7075 (ALCLAD)

Condition/Ht: T6	Yield Strength: 67.7 ksi
Form: 0.09 in. Sheet	Ult. Strength: 77.8 ksi
Specimen Type: CCP (max load specified)	Specimen Thk: 0.089 in.
Orientation: T-L	Specimen Width: 4 in.
Frequency: 13.3 Hz	Ref: 86213
Environment: LAB AIR; RT	

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)
6.36 (min)	4.42
7.	4.71
8.	6.25
9.	9.03
10.	13.1
13.	33.4
16.	86.1
20.	285.
21.86 (max)	656.

ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)

RMS % Error	Life Prediction Ratio Summary
8.01	0. .5 .8 1.25 2.

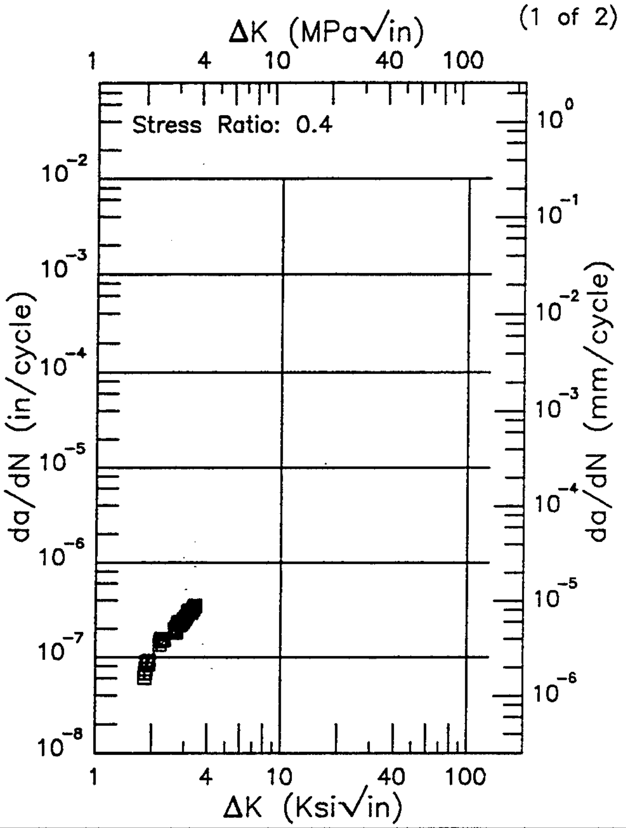
RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

Figure 8.10.3.1.3

Condition/Ht: T6
Form: Sheet
Specimen Type: CCP (max stress specified)
Orientation: T–L
Frequency: 30 Hz
Environment: LAB AIR; RT

Yield Strength: 47.2 ksi
Ult. Strength: 68.2 ksi
Specimen Thk: 0.09 in.
Specimen Width: 14 in.
Ref: EFM01

(1 of 2)

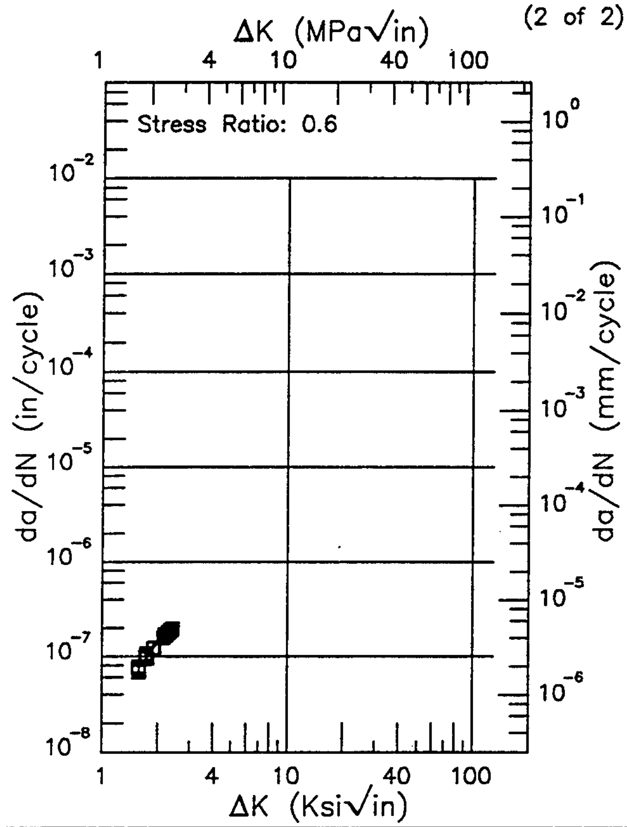


ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
1.82 (min)	0.0689
2.	0.105
2.5	0.173
3.	0.254
3.40 (max)	0.330

RMS % Error: 5.95

Life Prediction Ratio Summary: 0. .5 .8 1.25 2.

(2 of 2)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
1.56 (min)	0.0672
1.6	0.0767
2.	0.138
2.40 (max)	0.190

RMS % Error: 5.13

Life Prediction Ratio Summary: 0. .5 .8 1.25 2.

Figure 8.10.3.1.4

TABLE 8.11.1.1

MEAN PLANE STRAIN FRACTURE TOUGHNESS FOR ALUMINUM 7000/8000 SERIES ALLOY 7079 AT ROOM TEMPERATURE

Product Form	Condition/Heat Treatment	K_{Ic} $(ksi\sqrt{in})$								
		Specimen Orientation								
		L-T			T-L			S-L		
		Mean K_{Ic}	Std Dev	n	Mean K_{Ic}	Std Dev	n	Mean K_{Ic}	Std Dev	n
Plate	T6	33.	2.9	8	---	---	---	---	---	---
	T651	27.6	1.8	39	23.3	2.	27	18.6	3.2	10
	T851	28.6	1.6	7	21.3	3.4	2	---	---	---
Forging	T652	27.8	2.2	13	23.1	2.2	10	18.1	0.7	12

TABLE 8.11.1.2.1

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF STRESS INTENSITY FACTOR ΔK 7079 AT ROOM TEMPERATURE

ORIENTATION: L-S **ENVIRONMENT: Lab Air**

CONDITION/ HEAT TREATMENT	PRODUCT FORM	R	FREQ (Hz)	*FCGR* (10^{-6} *in/cycle*)					
				Δ*K Level* (*Ksi*√*in*)					
				2.5	5.0	10.0	20.0	50.0	100.0
T652	FORGING	0.33	5.17			15.47			

TABLE 8.11.1.2.2

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF STRESS INTENSITY FACTOR ΔK 7079 AT ROOM TEMPERATURE

ORIENTATION: L-T **ENVIRONMENT: Lab Air**

CONDITION/ HEAT TREATMENT	PRODUCT FORM	R	FREQ (Hz)	*FCGR* (10^{-6} *in/cycle*) — ΔK *Level* ($Ksi\sqrt{in}$) 2.5	5.0	10.0	20.0	50.0	100.0
T6	SHEET	0.05	2				64.8		
		0.5	2				360.68		
	BILLET	0.02	1-30			10.4	108.02		
T651	SHEET	0.05	2			16.1	93.89		
T652	FORGING	0.33	5.17			22.35	144.68		

TABLE 8.11.1.2.3

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF STRESS INTENSITY FACTOR ΔK 7079 AT ROOM TEMPERATURE

ORIENTATION: T-S **ENVIRONMENT: H.H.A.**

CONDITION/ HEAT TREATMENT	PRODUCT FORM	R	FREQ (Hz)	*FCGR* (10^{-6} *in/cycle*) ΔK *Level* (*Ksi√in*) 2.5	5.0	10.0	20.0	50.0	100.0
T652	FORGING	0.33	5.17			17.14			

TABLE 8.11.1.2.4

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF STRESS INTENSITY FACTOR ΔK 7079 AT ROOM TEMPERATURE

ORIENTATION: T-S **ENVIRONMENT: L.H.A.**

CONDITION/ HEAT TREATMENT	PRODUCT FORM	R	FREQ (Hz)	*FCGR* (10^{-6} *in/cycle*)					
				ΔK *Level* (*Ksi*$\sqrt{in}$)					
				2.5	5.0	10.0	20.0	50.0	100.0
T652	FORGING	0.33	5.17			8.6			

TABLE 8.11.1.2.5

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF STRESS INTENSITY FACTOR ΔK 7079 AT ROOM TEMPERATURE

ORIENTATION: T-S **ENVIRONMENT: Lab Air**

CONDITION/ HEAT TREATMENT	PRODUCT FORM	R	FREQ (Hz)	*FCGR* (10^{-6} *in/cycle*)					
				ΔK *Level* ($Ksi\sqrt{in}$)					
				2.5	5.0	10.0	20.0	50.0	100.0
T652	FORGING	0.33	5.17			10.3	60.49		

TABLE 8.11.1.2.6

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF STRESS INTENSITY FACTOR ΔK 7079 AT ROOM TEMPERATURE

ORIENTATION: T-S **ENVIRONMENT: Salt Fog**

CONDITION/ HEAT TREATMENT	PRODUCT FORM	R	FREQ (Hz)	*FCGR* (10^{-6} *in/cycle*)					
				ΔK *Level* ($Ksi\sqrt{in}$)					
				2.5	5.0	10.0	20.0	50.0	100.0
T652	FORGING	0.33	5.17			19.42			

TABLE 8.11.1.2.7

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF STRESS INTENSITY FACTOR ΔK 7079 AT ROOM TEMPERATURE

ORIENTATION: T-L **ENVIRONMENT: H.H.A.**

CONDITION/ HEAT TREATMENT	PRODUCT FORM	R	FREQ (Hz)	*FCGR* (10^{-6} *in/cycle*) ΔK Level (Ksi√in) 2.5	5.0	10.0	20.0	50.0	100.0
T6	FORGING	0.05	9		1.87	15.93	72.89		
		0.5	9	0.27	4.02				

TABLE 8.11.1.2.8

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF STRESS INTENSITY FACTOR ΔK 7079 AT ROOM TEMPERATURE

ORIENTATION: T-L **ENVIRONMENT: Lab Air**

CONDITION/ HEAT TREATMENT	PRODUCT FORM	R	FREQ (Hz)	*FCGR* (10^{-6} *in/cycle*) ΔK *Level* (*Ksi√in*)					
				2.5	5.0	10.0	20.0	50.0	100.0
T6	FORGING	0.05	9		0.44	7.72	42.69		
		0.5	9	0.19	2.15	26.8			
T652	FORGING	0.33	5.17			17.05			

TABLE 8.11.1.2.9

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF STRESS INTENSITY FACTOR ΔK 7079 AT ROOM TEMPERATURE

ORIENTATION: S-T **ENVIRONMENT: Lab Air**

CONDITION/ HEAT TREATMENT	PRODUCT FORM	R	FREQ (Hz)	*FCGR* (10^{-6} *in/cycle*)					
				ΔK *Level* ($Ksi\sqrt{in}$)					
				2.5	5.0	10.0	20.0	50.0	100.0
T652	FORGING	0.33	5.17			18.3			

TABLE 8.11.1.2.10

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF STRESS INTENSITY FACTOR ΔK 7079 AT ROOM TEMPERATURE

ORIENTATION: S-L **ENVIRONMENT: Lab Air**

CONDITION/ HEAT TREATMENT	PRODUCT FORM	R	FREQ (Hz)	*FCGR* (10^{-6} *in/cycle*) ΔK *Level* (*Ksi√in*)					
				2.5	5.0	10.0	20.0	50.0	100.0
T652	FORGING	0.33	5.17			9.73			

TABLE 8.11.2.1

ALUMINUM 7079 K_{Ic}

CONDITION	PRODUCT FORM	PRODUCT THICK (in.)	TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN WIDTH (in.) W	SPECIMEN THICK (in.) B	SPECIMEN DESIGN	CRACK LENGTH (in.) A	$2.5 * (K_{Ic}/TYS)^2$ (in.)	K_{Ic} K_{Ic} (Ksi√in.)	K_{Ic} K_{Ic} MEAN	K_{Ic} STAN DEV	DATE	REFER
T6	Plate	3.00	-75	L-T	68.6	2.550	1.000	CT	0.881	0.55	32.30	---	---	1966	76411
T6	Plate	3.00	-40	L-T	68.5	2.550	1.000	CT	0.896	0.44	28.80	---	---	1966	76411
T6	Plate	3.00	0	L-T	69.2	2.550	1.000	CT	1.017	0.64	35.00	---	---	1966	76411
T6	Plate	3.00	32	L-T	65.7	2.550	1.000	CT	0.918	0.60	32.20	---	---	1966	76411
T6	Plate	3.00	R.T.	L-T	65.0	2.550	1.000	CT	0.875	0.56	30.70	33.0	2.9	1966	76411
		3.00			65.0	2.550	1.000	CT	0.958	0.52	29.50			1966	76411
		3.00			65.0	2.550	1.000	CT	0.932	0.66	33.50			1966	76411
		3.00			65.0	2.550	1.000	CT	1.080	0.71	34.50			1966	76411
		3.00			65.0	2.550	1.000	CT	1.058	0.87	38.50			1966	76411
		3.00			65.0	2.550	1.000	CT	0.966	0.70	34.30			1966	76411
		3.00			65.0	2.550	1.000	CT	0.911	0.54	30.40			1966	76411
		3.00			65.0	2.550	1.000	CT	1.107	0.64	32.80			1966	76411
T6	Plate	3.00	100	L-T	62.0	2.550	1.000	CT	0.977	0.73	33.40	---	---	1966	76411
T6	Plate	3.00	150	L-T	63.0	2.550	1.000	CT	0.978	0.80	35.60	---	---	1966	76411
T6	Forging	0.89	R.T.	T-L	67.7	0.500	0.249	NB	0.258	0.23	20.60	---	---	1973	86213
T6	Forging	---	R.T.	C-L	67.6	1.500	0.750	CT	0.750	0.23	20.50	20.4	0.1	1972	82879
		---			67.6	1.500	0.750	CT	0.750	0.22	20.30			1972	82879
T6	Forging	0.89	84	T-L	67.6	1.500	0.750	CT	0.814	0.21	19.40	---	---	1973	86213
T6	Forged Bar	4.50	R.T.	T-L	67.4	0.500	0.250	NB	0.277	0.25	21.10	---	---	1973	86213
T651	Plate	1.38	-320	T-L	90.6	3.000	1.380	NB	1.450	0.20	25.90	26.7	1.3	1971	84288
		1.38			90.6	3.000	1.380	NB	1.560	0.20	25.90			1971	84288
		1.38			90.6	3.000	1.380	NB	1.530	0.24	28.20			1971	84288

TABLE 8.11.2.1 (CONTINUED)

ALUMINUM 7079 K_{Ic}

CONDITION	PRODUCT FORM	PRODUCT THICK (in.)	TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN WIDTH (in.) W	SPECIMEN THICK (in.) B	SPECIMEN DESIGN	CRACK LENGTH (in.) A	2.5 * (K_{Ic}/TYS)² (in.)	K_{Ic} K_{Ic} (Ksi√in.)	K_{Ic} K_{Ic} MEAN	K_{Ic} STAN DEV	DATE	REFER
T651	Plate	1.38	-112	T-L	81.2	3.000	1.383	NB	1.652	0.23	27.50	26.1	2.0	1971	84288
		1.38			81.2	3.000	1.385	NB	1.695	0.19	24.70			1971	84288
T651	Plate	1.37	R.T.	L-S	77.6	1.004	0.501	CT	0.512	0.30	27.40	---	---	1978	MPC01
T651	Plate	5.00	R.T.	L-T	65.8	2.000	1.001	CT	1.023	0.43	27.20	27.6	1.8	1973	86213
		5.00			65.8	2.000	1.001	CT	1.014	0.41	26.80			1973	86213
		5.00			66.4	2.000	1.001	CT	1.008	0.37	25.50			1973	86213
		5.00			66.4	2.000	1.002	CT	1.018	0.38	25.90			1973	86213
		1.37			75.2	3.000	1.398	NB	1.569	0.36	28.70			1973	86213
		1.37			75.2	3.000	1.398	NB	1.607	0.41	30.30			1973	86213
		1.37			75.2	3.000	1.398	NB	1.506	0.40	30.00			1973	86213
		1.37			75.2	3.000	1.397	NB	1.545	0.42	30.80			1973	86213
		1.37			76.0	1.990	1.003	CT	0.975	0.30	26.60			1978	MPC01
		1.37			76.0	2.998	1.379	NB	1.469	0.28	25.90			1978	MPC01
		1.37			76.0	3.029	1.383	NB	1.484	0.27	25.10			1978	MPC01
		1.37			76.0	3.000	1.381	NB	1.528	0.38	29.50			1973	86213
		1.37			76.0	1.990	1.002	CT	1.015	0.30	26.70			1978	MPC01
		1.37			76.0	2.973	1.381	NB	1.546	0.30	26.60			1978	MPC01
		1.37			76.0	3.022	1.381	NB	1.511	0.36	28.90			1978	MPC01
		1.37			76.0	2.985	1.382	NB	1.582	0.28	26.50			1978	MPC01
		1.37			76.0	3.000	1.379	NB	1.445	0.28	25.30			1973	86213
		1.37			76.0	3.000	1.379	NB	1.502	0.33	27.70			1973	86213
		1.37			76.0	3.000	1.383	NB	1.569	0.33	27.50			1973	86213
		1.37			76.0	3.000	1.381	NB	1.587	0.33	27.80			1973	86213

TABLE 8.11.2.1 (CONTINUED)

ALUMINUM 7079 K_{Ic}

CONDITION	PRODUCT FORM	PRODUCT THICK (in.)	TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN WIDTH (in.) W	SPECIMEN THICK (in.) B	SPECIMEN DESIGN	CRACK LENGTH (in.) A	2.5 * $(K_{Ic}/TYS)^2$ (in.)	K_{Ic} K_{Ic} (Ksi√in.)	K_{Ic} K_{Ic} MEAN	K_{Ic} STAN DEV	DATE	REFER
T651 Cont'd	Plate Cont'd	1.37	R.T. Cont'd	L-T Cont'd	76.0	2.000	1.001	CT	1.002	0.32	27.40	Cont'd	Cont'd	1973	86213
		1.37			76.0	2.000	1.002	CT	1.013	0.31	26.70			1973	86213
		1.37			76.0	2.000	1.003	CT	0.986	0.31	26.90			1973	86213
		1.37			76.0	3.000	1.382	NB	1.630	0.34	27.90			1973	86213
		1.37			76.0	2.980	1.379	NB	1.490	0.30	27.30			1978	MPC01
		1.37			76.0	3.018	1.383	NB	1.509	0.27	25.60			1978	MPC01
		1.37			76.0	3.000	1.383	NB	1.591	0.34	28.00			1973	86213
		1.37			76.0	2.000	1.001	CT	1.000	0.32	27.40			1978	MPC01
		1.37			77.6	3.000	1.381	NB	1.510	0.35	28.90			1973	86213
		1.37			77.6	3.002	1.384	NB	1.501	0.30	27.50			1978	MPC01
		1.37			77.6	3.000	1.385	NB	1.522	0.45	32.90			1973	86213
		1.37			77.6	3.002	1.381	NB	1.471	0.25	25.10			1978	MPC01
		1.37			77.6	3.000	1.381	NB	1.500	0.32	28.60			1978	MPC01
		1.37			77.6	3.002	1.385	NB	1.501	0.42	32.20			1978	MPC01
		1.37			77.6	3.026	1.383	NB	1.513	0.27	26.30			1978	MPC01
		1.37			77.6	3.000	1.385	NB	1.655	0.30	27.00			1973	86213
		1.37			77.6	3.000	1.384	NB	1.531	0.33	28.40			1973	86213
		1.00			79.7	1.987	0.965	CT	1.073	0.27	26.80			1978	MPC01
		1.00			79.7	1.989	0.966	CT	1.074	0.28	27.40			1978	MPC01
T651	Plate	1.37	R.T.	T-S	74.2	1.002	0.500	CT	0.501	0.27	24.80	24.7	0.1	1978	MPC01
		1.37			74.2	0.996	0.500	CT	0.488	0.27	24.60			1978	MPC01

TABLE 8.11.2.1 (CONTINUED)

ALUMINUM 7079 K_{Ic}

CONDITION	PRODUCT		TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN			CRACK LENGTH (in.) A	2.5 * (K_{Ic}/TYS)² (in.)	K_{Ic}			DATE	REFER
	FORM	THICK (in.)				WIDTH (in.) W	THICK (in.) B	DESIGN			K_{Ic} (Ksi√in.)	K_{Ic} MEAN	STAN DEV		
		5.00			65.2	2.000	1.001	CT	1.050	0.42	26.60			1973	86213
		5.00			65.2	2.000	1.001	CT	1.044	0.37	25.00			1973	86213
		5.00			66.0	2.000	1.001	CT	1.019	0.36	25.00			1973	86213
		1.38			72.8	1.000	0.500	NB	0.487	0.30	25.10			1972	82880
		1.37			72.8	2.000	1.001	CT	1.008	0.26	23.70			1973	86213
		1.37			72.8	1.996	1.000	CT	0.998	0.27	24.50			1978	MPC01
		1.38			72.8	3.000	1.380	NB	1.628	0.28	24.30			1972	82880
		1.37			72.8	2.000	1.000	CT	1.003	0.29	24.70			1973	86213
		1.38			72.8	1.000	0.500	NB	0.486	0.23	21.90			1972	82880
		1.37			72.8	3.002	1.382	NB	1.471	0.25	24.00			1978	MPC01
		1.38			72.8	2.000	1.000	NB	1.034	0.26	23.30			1972	82880
T651	Plate	1.37	R.T.	T-L	72.8	2.982	1.384	NB	1.491	0.27	24.70	23.3	2.0	1978	MPC01
		1.37			72.8	2.000	1.002	CT	1.000	0.25	23.20			1973	86213
		1.38			72.8	1.500	0.750	NB	0.781	0.29	24.90			1972	82880
		1.38			72.8	2.000	1.000	NB	1.078	0.25	22.80			1972	82880
		1.37			72.8	2.008	1.002	CT	0.984	0.24	22.70			1978	MPC01
		1.38			72.8	2.000	1.000	NB	1.128	0.16	18.60			1972	82880
		1.38			72.8	3.000	1.380	NB	1.677	0.26	23.60			1972	82880
		1.38			72.8	3.000	1.380	NB	1.617	0.23	22.30			1972	82880
		1.38			72.8	1.500	0.750	NB	0.757	0.26	23.50			1972	82880
		1.37			74.2	2.984	1.385	NB	1.462	0.25	24.30			1978	MPC01
		1.37			74.2	3.006	1.384	NB	1.473	0.19	21.20			1978	MPC01
		1.37			74.2	3.000	1.385	NB	1.500	0.27	24.90			1978	MPC01

TABLE 8.11.2.1 (CONTINUED)

ALUMINUM 7079 K_{Ic}

CONDITION	PRODUCT FORM	PRODUCT THICK (in.)	TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN WIDTH (in.) W	SPECIMEN THICK (in.) B	SPECIMEN DESIGN	CRACK LENGTH (in.) A	2.5 * $(K_{Ic}/TYS)^2$ (in.)	K_{Ic} (Ksi√in.)	K_{Ic} MEAN	STAN DEV	DATE	REFER
T651 Cont'd	Plate Cont'd	1.37	R.T. Cont'd	T-L Cont'd	74.2	3.000	1.384	NB	1.470	0.19	21.50	Cont'd	Cont'd	1978	MPC01
		1.37			74.2	3.000	1.384	NB	1.560	0.26	23.70			1973	86213
		1.00			74.8	2.006	0.968	CT	1.063	0.14	18.20			1978	MPC01
		1.37			75.6	3.000	1.397	NB	1.612	0.21	20.80			1973	86213
T651	Plate	5.00	R.T.	S-L	60.6	2.000	1.001	CT	0.994	0.33	21.90	18.6	3.2	1973	86213
		5.00			60.6	2.000	1.001	CT	1.002	0.37	23.40			1973	86213
		5.00			61.6	2.000	1.001	CT	1.024	0.31	21.80			1973	86213
		5.00			61.6	2.000	1.001	CT	1.015	0.30	21.50			1973	86213
		1.37			67.3	1.000	0.501	CT	0.485	0.14	15.90			1973	86213
		1.37			67.3	1.000	0.501	CT	0.480	0.15	16.90			1978	MPC01
		1.37			67.3	1.011	0.501	CT	0.465	0.13	15.70			1978	MPC01
		1.37			67.3	1.000	0.500	CT	0.473	0.15	16.50			1973	86213
		1.37			67.3	1.008	0.501	CT	0.484	0.13	15.80			1978	MPC01
		1.37			67.3	1.000	0.500	CT	0.472	0.14	16.10			1973	86213
T651	Plate	1.37	82	L-T	77.6	2.000	1.001	CT	1.007	0.29	26.40	26.6	0.3	1973	86213
		1.37			77.6	2.000	1.001	CT	1.010	0.30	26.80			1973	86213
T651	Plate	1.37	82	T-L	74.2	2.000	1.001	CT	1.017	0.21	21.50	21.7	0.3	1973	86213
		1.37			74.2	2.000	1.000	CT	1.012	0.22	22.10			1973	86213
		1.37			74.2	2.000	1.001	CT	1.007	0.21	21.60			1973	86213
T651	Plate	1.37	86	S-L	69.1	1.000	0.500	CT	0.505	0.17	17.90	17.1	1.0	1973	86213
		1.37			69.1	1.000	0.500	CT	0.490	0.16	17.40			1973	86213
		1.37			69.1	1.000	0.500	CT	0.507	0.13	16.00			1973	86213

TABLE 8.11.2.1 (CONTINUED)

ALUMINUM 7079 K_{Ic}

CONDITION	PRODUCT		TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN			CRACK LENGTH (in.) A	2.5 * (K_{Ic}/TYS)^2 (in.)	K_{Ic}			DATE	REFER
	FORM	THICK (in.)				WIDTH (in.) W	THICK (in.) B	DESIGN			K_{Ic} (Ksi√in.)	K_{Ic} MEAN	STAN DEV		
T651	Plate	1.37	88	L-S	77.6	1.000	0.500	CT	0.504	0.35	28.90	---	---	1973	86213
T651	Plate	5.00	88	L-T	66.9	2.000	1.001	CT	1.014	0.38	26.20	26.0	0.4	1973	86213
		5.00			66.9	2.000	1.002	CT	1.035	0.37	25.70			1973	86213
T651	Plate	1.37	88	T-S	74.2	1.000	0.500	CT	0.488	0.27	24.50	25.3	1.1	1973	86213
		1.37			74.2	1.000	0.500	CT	0.501	0.31	26.00			1973	86213
T651	Plate	5.00	88	T-L	65.5	2.000	1.002	CT	1.047	0.36	25.00	24.9	0.2	1973	86213
		5.00			65.5	2.000	1.001	CT	1.019	0.36	24.70			1973	86213
T651	Plate	1.37	88	S-T	69.1	1.000	0.500	CT	0.523	0.15	17.20	17.0	0.4	1973	86213
		1.37			69.1	1.000	0.500	CT	0.483	0.15	16.70			1973	86213
T651	Plate	5.00	88	S-L	60.5	2.000	1.001	CT	1.016	0.31	21.30	22.0	0.5	1973	86213
		5.00			60.5	2.000	1.001	CT	1.022	0.33	22.00			1973	86213
		5.00			61.8	2.000	1.002	CT	1.030	0.33	22.60			1973	86213
		5.00			61.8	2.000	1.001	CT	1.024	0.32	22.10			1973	86213
T652	Forging	6.00	R.T.	L-T	63.9	4.000	2.001	NB	1.990	0.67	33.10	27.8	2.2	1970	77720
		6.00			63.9	4.000	2.001	NB	2.055	0.51	28.80			1970	77720
		6.00			63.9	4.000	2.001	NB	1.942	0.50	28.50			1970	77720
		5.00			65.6	3.000	1.502	NB	1.495	0.37	25.10			1970	77720
		5.00			65.6	3.000	1.500	NB	1.593	0.43	27.10			1970	77720
		4.00			68.0	3.000	1.500	NB	1.587	0.40	27.10			1970	77720
		4.00			68.0	3.000	1.500	NB	1.573	0.37	26.20			1970	77720

TABLE 8.11.2.1 (CONTINUED)

ALUMINUM 7079 K_{Ic}

CONDITION	PRODUCT FORM	PRODUCT THICK (in.)	TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN WIDTH (in.) W	SPECIMEN THICK (in.) B	SPECIMEN DESIGN	CRACK LENGTH (in.) A	$2.5 * (K_{Ic}/TYS)^2$ (in.)	K_{Ic} (Ksi√in.)	K_{Ic} MEAN	STAN DEV	DATE	REFER
T652 Cont'd	Forging Cont'd	4.00	R.T. Cont'd	L-T Cont'd	68.0	3.000	1.500	NB	1.570	0.38	26.40	Cont'd	Cont'd	1970	77720
		3.00			68.7	2.000	1.000	NB	1.022	0.39	27.10			1970	77720
		3.00			68.7	2.000	0.999	NB	1.015	0.40	27.70			1970	77720
		2.00			71.0	1.490	0.753	NB	0.753	0.38	27.70			1970	77720
		2.00			71.0	1.490	0.751	NB	0.845	0.47	30.80			1970	77720
		2.00			71.0	1.500	0.750	NB	0.733	0.32	25.40			1970	77720
T652	Forging	6.00	R.T.	T-S	59.1	4.000	2.002	CT	2.167	0.38	22.90	---	---	1973	86213
T652	Forging	6.00	R.T.	T-L	57.5	4.000	2.001	NB	2.170	0.44	24.10	23.1	2.2	1970	77720
		6.00			57.5	4.000	2.001	NB	2.035	0.38	22.40			1970	77720
		6.00			57.5	4.000	2.001	NB	2.092	0.46	24.60			1970	77720
		5.00			61.4	3.000	1.500	NB	1.527	0.44	25.60			1970	77720
		5.00			61.4	3.000	1.500	NB	1.578	0.34	22.50			1970	77720
		4.00			63.0	3.000	1.500	NB	1.602	0.24	19.50			1970	77720
		2.00			64.9	1.500	0.751	NB	0.797	0.36	24.70			1970	77720
		3.00			65.7	2.000	1.000	NB	1.032	0.39	26.00			1970	77720
		3.00			65.7	2.000	0.998	NB	0.990	0.24	20.50			1970	77720
		3.00			65.7	2.000	0.998	NB	0.963	0.26	21.10			1970	77720

TABLE 8.11.2.1 (CONCLUDED)

ALUMINUM 7079 K_{Ic}

CONDITION	PRODUCT FORM	PRODUCT THICK (in.)	TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN WIDTH (in.) W	SPECIMEN THICK (in.) B	SPECIMEN DESIGN	CRACK LENGTH (in.) A	2.5 * (K_{Ic}/TYS)² (in.)	K_{Ic} (Ksi√in.)	K_{Ic} MEAN	STAN DEV	DATE	REFER
T652	Forging	6.00	R.T.	S-L	58.1	1.000	0.500	NB	0.495	0.23	17.60	18.1	0.7	1970	77720
		6.00			58.1	1.000	0.500	NB	0.493	0.26	18.70			1970	77720
		6.00			58.1	1.000	0.499	NB	0.482	0.24	18.00			1970	77720
		5.00			58.3	1.000	0.500	NB	0.485	0.22	18.30			1970	77720
		5.00			58.3	1.000	0.500	NB	0.517	0.22	18.10			1970	77720
		5.00			58.3	1.000	0.500	NB	0.487	0.22	18.30			1970	77720
		6.00			58.5	2.000	1.000	CT	0.978	0.23	17.60			1973	86213
		6.00			58.5	2.000	1.000	CT	0.981	0.23	17.70			1973	86213
		6.00			58.5	2.000	1.000	CT	0.996	0.25	18.60			1973	86213
		4.00			62.9	0.500	0.250	NB	0.257	0.19	17.20			1970	77720
		4.00			62.9	0.500	0.250	NB	0.263	0.18	17.10			1970	77720
		4.00			62.9	0.500	0.250	NB	0.282	0.24	19.70			1970	77720
T851	Plate	1.37	R.T.	L-T	75.2	2.982	1.397	NB	1.640	0.28	25.90	28.6	1.6	1978	MPC01
		1.37			75.2	2.994	1.398	NB	1.557	0.36	28.70			1978	MPC01
		1.37			75.2	2.984	1.398	NB	1.522	0.32	27.20			1978	MPC01
		1.37			75.2	3.020	1.397	NB	1.540	0.40	30.60			1978	MPC01
		1.37			75.2	3.010	1.398	NB	1.505	0.38	29.90			1978	MPC01
		1.50			76.8	2.016	1.002	CT	1.109	0.36	29.70			1978	MPC01
		1.50			76.8	2.006	1.002	CT	1.083	0.32	28.40			1978	MPC01
T851	Plate	1.37	R.T.	T-L	72.6	2.988	1.397	NB	1.524	0.16	18.90	21.3	3.4	1978	MPC01
		1.50			74.4	2.006	1.001	CT	1.063	0.24	23.70			1978	MPC01

TABLE 8.11.2.2

ALUMINUM 7079 K_C

CONDITION HEAT TREAT	PRODUCT		TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN		CRACK LENGTH		GROSS STRESS		K_{app}			K_C			DATE	REFER
	FORM	THICK (in.)				WIDTH (in.) W	THICK (in.) B	INIT (in.) $2a_o$	FINAL (in.) $2a_f$	ONSET (Ksi) σ_o	MAX (Ksi) σ_{Max}	K_{app} (Ksi√in)	K_{app} MEAN	STAN DEV	K_c (Ksi√in)	K_c MEAN	STAN DEV		
BUCKLING OF CRACK EDGES NOT RESTRAINED																			
T6	Sheet	0.06	R.T.	L-T	70.2	2.000	0.061	0.625	1.270	---	42.40	44.69*	---	---	81.31*	---	---	1973	86213
		0.06			70.2	2.000	0.061	0.625	1.220	---	42.60	44.90*			77.77*			1973	86213
		0.06			64.0	2.000	0.062	0.624	0.820	---	42.30	44.58*			53.68*			1973	86213
		0.06			64.0	2.000	0.062	0.622	0.870	---	42.90	45.13*			56.95*			1973	86213
		0.06			64.0	2.000	0.062	0.623	0.750	---	43.20	45.44*			51.42*			1973	86213
		0.06			70.2	2.000	0.063	0.625	1.120	---	43.60	45.95*			72.43*			1973	86213
		0.06			70.2	2.000	0.063	0.625	1.150	---	43.20	45.53*			73.79*			1973	86213
		0.06			70.2	2.000	0.063	0.625	1.150	---	43.20	45.53*			73.79*			1973	86213
T6	Sheet	0.10	R.T.	L-T	75.6	3.000	0.112	1.000	1.410	---	39.70	53.47	53.8	0.5	68.70*	---	---	1973	86213
		0.10			75.6	3.000	0.112	1.000	---	---	40.50	54.54*			---			1973	86213
		0.10			75.6	3.000	0.112	1.000	1.370	---	40.60	54.68*			68.61*			1973	86213
		0.10			75.6	3.000	0.112	1.000	1.480	---	40.20	54.14			72.51*			1973	86213
T6	Sheet	0.12	R.T.	L-T	72.0	3.000	0.119	0.995	1.320	---	42.40	56.88*	---	---	69.55*	---	---	1973	86213
		0.12			72.0	3.000	0.119	0.997	1.320	---	42.40	56.95*			69.55*			1973	86213
		0.12			72.0	2.990	0.120	0.991	1.300	---	42.00	56.22*			68.14*			1973	86213
		0.12			72.0	2.990	0.120	0.995	1.210	---	42.30	56.77*			65.01*			1973	86213
T6	Sheet	0.14	R.T.	L-T	74.2	3.000	0.128	1.143	1.949	---	36.00	53.04	53.1	0.1	87.04*	—	—	1973	86213
		0.14			74.2	3.000	0.128	1.180	1.951	---	35.30	53.23			85.47*			1973	86213

* NOTE: NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STANDARD DEVIATION.

TABLE 8.11.2.2 (CONTINUED)

ALUMINUM 7079 K_C																			
CONDITION HEAT TREAT	PRODUCT		TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN		CRACK LENGTH		GROSS STRESS		K_{app}			K_C			DATE	REFER
	FORM	THICK (in.)				WIDTH (in.) W	THICK (in.) B	INIT (in.) $2a_o$	FINAL (in.) $2a_f$	ONSET (Ksi) σ_o	MAX (Ksi) σ_{Max}	K_{app} (Ksi$\sqrt{in}$)	K_{app} MEAN	STAN DEV	K_c (Ksi$\sqrt{in}$)	K_c MEAN	STAN DEV		
BUCKLING OF CRACK EDGES NOT RESTRAINED																			
T6	Sheet	0.14	R.T.	L-T	75.7	3.000	0.136	1.133	1.873	---	35.70	52.27	52.2	0.1	82.04*	---	---	1973	86213
		0.14			75.7	3.000	0.136	1.107	1.951	---	36.20	52.15			87.65*			1973	86213
T6	Sheet	0.10	82	L-T	72.5	3.000	0.099	1.110	2.010	---	37.10	53.59*	---	---	93.65*	---	---	1973	86213
		0.10			72.5	3.000	0.099	1.150	2.032	---	35.50	52.56			91.03*			1973	86213
T6	Sheet	0.10	84	L-T	71.6	3.000	0.099	1.150	2.145	---	35.50	52.56*	---	---	98.96*	---	---	1973	86213
		0.10			71.6	3.000	0.099	1.130	2.041	---	35.50	51.91			91.56*			1973	86213
T6	Sheet	0.06	R.T.	T-L	62.4	2.000	0.061	0.624	0.850	---	41.00	43.21*	---	---	53.46*	---	---	1973	86213
		0.06			62.4	2.000	0.062	0.623	0.800	---	40.90	43.02*			50.97*			1973	86213
		0.06			62.4	2.000	0.062	0.622	0.830	---	41.80	43.97*			53.53*			1973	86213
		0.06			67.3	2.000	0.062	0.625	1.040	---	40.30	42.48*			62.26*			1973	86213
		0.06			67.3	2.000	0.062	0.625	1.180	---	41.10	43.32*			72.21*			1973	86213
		0.06			67.3	2.000	0.062	0.625	1.260	---	41.10	43.32*			78.04*			1973	86213
		0.06			67.3	2.000	0.062	0.625	1.110	---	39.80	41.95*			65.52*			1973	86213
		0.06			67.3	2.000	0.062	0.625	1.060	---	41.30	43.53*			64.96*			1973	86213
T6	Sheet	0.10	R.T.	T-L	68.3	3.000	0.099	1.150	2.035	---	33.80	50.04*	---	---	86.80*	---	---	1973	86213
		0.10			68.3	3.000	0.099	1.160	2.005	---	33.60	50.05*			84.46*			1973	86213
T6	Sheet	0.10	R.T.	T-L	73.8	3.000	0.112	1.000	1.320	---	36.60	49.29	49.1	0.8	60.04*	---	---	1973	86213
		0.10			73.8	3.000	0.112	1.000	1.520	---	36.30	48.89			67.06*			1973	86213

* NOTE: NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STANDARD DEVIATION.

TABLE 8.11.2.2 (CONTINUED)

ALUMINUM 7079 K_C

CONDITION HEAT TREAT	PRODUCT FORM	PRODUCT THICK (in.)	TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN WIDTH (in.) W	SPECIMEN THICK (in.) B	CRACK LENGTH INIT (in.) $2a_o$	CRACK LENGTH FINAL (in.) $2a_f$	GROSS STRESS ONSET (Ksi) σ_o	GROSS STRESS MAX (Ksi) σ_{Max}	K_{app} (Ksi√in)	K_{app} MEAN	K_{app} STAN DEV	K_C (Ksi√in)	K_C MEAN	K_C STAN DEV	DATE	REFER
BUCKLING OF CRACK EDGES NOT RESTRAINED																			
T6 Cont'd	Sheet Cont'd	0.10	R.T. Cont'd	T-L Cont'd	73.8	3.000	0.112	1.000	1.430	---	35.70	48.08	Cont'd	Cont'd	62.51*	Cont'd	Cont'd	1973	86213
		0.10			73.8	3.000	0.112	1.000	---	---	37.10	49.97			---			1973	86213
T6	Sheet	0.12	R.T.	T-L	69.6	2.990	0.119	0.995	1.300	---	39.20	52.61*	---	---	63.60*	---	---	1973	86213
		0.12			69.6	2.990	0.119	0.992	1.350	---	38.10	51.07*			63.69*			1973	86213
		0.12			69.6	2.990	0.119	0.992	1.350	---	37.30	50.00*			62.35*			1973	86213
T6	Sheet	0.14	R.T.	T-L	71.3	3.000	0.128	1.180	1.964	---	31.80	47.95	47.6	0.5	77.74*	---	---	1973	86213
		0.14			71.3	3.000	0.129	1.240	1.962	---	30.20	47.23			73.72*			1973	86213
T6	Sheet	0.14	R.T.	T-L	73.7	3.000	0.137	1.160	1.902	---	29.10	43.35	43.8	0.6	68.21*	---	---	1973	86213
		0.14			73.7	3.000	0.137	1.160	1.911	---	29.70	44.24			69.99*			1973	86213
T6	Sheet	0.10	84	T-L	69.1	3.000	0.099	1.170	1.993	---	31.00	46.46	46.1	0.5	77.27*	---	---	1973	86213
		0.10			69.1	3.000	0.100	1.110	2.047	---	31.70	45.79			82.11*			1973	86213
T651	Sheet	0.12	R.T.	L-T	74.9	3.000	0.124	1.000	1.360	23.10	37.10	49.97	50.7	1.2	62.32*	---	---	1973	86213
		0.12			74.3	3.000	0.125	1.000	1.300	20.70	38.10	51.31			61.76*			1973	86213
		0.12			74.9	3.000	0.125	1.000	1.510	23.60	37.50	50.50			68.86*			1973	86213
		0.12			74.9	3.000	0.125	1.090	1.430	19.40	35.00	49.92			61.29*			1973	86213
		0.12			76.1	3.000	0.125	1.000	1.460	22.30	37.90	51.04			67.56*			1973	86213
		0.12			74.3	3.000	0.126	1.100	1.390	20.50	35.30	50.67			60.37*			1973	86213
		0.12			74.3	3.000	0.126	1.130	1.530	18.70	33.90	49.57			63.00*			1973	86213
		0.12			74.3	3.000	0.126	1.000	1.540	21.20	36.00	48.48			67.30*			1973	86213

* NOTE: NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STANDARD DEVIATION.

TABLE 8.11.2.2 (CONTINUED)

ALUMINUM 7079 K_C

CONDITION HEAT TREAT	PRODUCT		TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN		CRACK LENGTH		GROSS STRESS		K_{app}			K_C			DATE	REFER
	FORM	THICK (in.)				WIDTH (in.) W	THICK (in.) B	INIT (in.) $2a_o$	FINAL (in.) $2a_f$	ONSET (Ksi) σ_o	MAX (Ksi) σ_{Max}	K_{app} (Ksi$\sqrt{in}$)	K_{app} MEAN	STAN DEV	K_c (Ksi$\sqrt{in}$)	K_c MEAN	STAN DEV		
BUCKLING OF CRACK EDGES NOT RESTRAINED																			
T651 Cont'd	Sheet Cont'd	0.12	R.T. Cont'd	L-T Cont'd	74.9	3.000	0.126	1.090	1.530	21.10	35.90	51.21	Cont'd	Cont'd	66.71*	Cont'd	Cont'd	1973	86213
		0.12			76.1	3.000	0.126	1.110	1.500	17.30	36.00	52.00			65.71*			1973	86213
		0.12			76.1	3.000	0.126	1.000	1.320	19.90	37.60	50.64			61.68*			1973	86213
		0.12			76.1	3.000	0.126	1.120	1.560	18.90	36.60	53.19			69.25*			1973	86213
T651	Plate	0.25	R.T.	L-T	74.7	3.000	0.250	1.230	1.630	---	26.70	41.50	40.2	1.1	52.69	51.6	1.8	1973	86213
		0.25			74.7	3.000	0.251	1.160	1.630	---	26.60	39.62			52.50			1973	86213
		0.25			74.7	3.000	0.251	1.000	1.370	---	29.30	39.46			49.51			1973	86213
T651	Plate	1.00	R.T.	L-T	74.3	20.000	1.000	7.000	10.370	---	13.30	47.76	49.0	5.1	64.80	64.9	7.6	1973	86213
		1.00			74.3	20.000	1.000	7.000	9.330	---	12.80	45.97			56.84			1973	86213
		1.00			74.3	20.000	1.000	7.000	9.750	---	12.90	46.32			59.46			1973	86213
		1.00			74.3	20.000	1.000	7.000	10.260	---	12.70	45.61			61.27			1973	86213
		1.00			74.9	20.000	1.000	7.000	10.660	---	12.50	44.89			62.51			1973	86213
		1.00			74.9	20.000	1.000	7.000	10.340	---	13.00	46.68			63.17			1973	86213
		1.00			74.9	20.000	1.000	7.000	9.980	---	12.50	44.89			58.81			1973	86213
		1.00			74.9	20.000	1.000	7.000	9.880	---	12.40	44.53			57.82			1973	86213
		1.00			76.1	20.000	1.000	7.000	10.100	---	15.50	55.66			73.71			1973	86213
		1.00			76.1	20.000	1.000	7.000	9.770	---	14.00	50.28			64.65			1973	86213
		1.00			76.1	20.000	1.000	7.000	10.650	---	16.20	58.18			80.94			1973	86213
		1.00			76.1	20.000	1.000	7.000	9.850	---	16.00	57.46			74.41			1973	86213

* NOTE: NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STANDARD DEVIATION.

TABLE 8.11.2.2 (CONTINUED)

ALUMINUM 7079 K_C

CONDITION HEAT TREAT	PRODUCT FORM	PRODUCT THICK (in.)	TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN WIDTH (in.) W	SPECIMEN THICK (in.) B	CRACK LENGTH INIT (in.) $2a_o$	CRACK LENGTH FINAL (in.) $2a_f$	GROSS STRESS ONSET (Ksi) σ_o	GROSS STRESS MAX (Ksi) σ_{Max}	K_{app} (Ksi$\sqrt{in}$)	K_{app} MEAN	K_{app} STAN DEV	K_C (Ksi$\sqrt{in}$)	K_C MEAN	K_C STAN DEV	DATE	REFER
BUCKLING OF CRACK EDGES NOT RESTRAINED																			
T651	Sheet	0.12	R.T.	T-L	72.6	3.000	0.125	1.000	1.390	21.30	34.30	46.19	44.3	1.8	58.66*	51.7	0.6	1973	86213
		0.12			72.6	3.000	0.125	1.100	1.360	18.90	32.00	45.93			53.76*			1973	86213
		0.12			71.4	3.000	0.126	1.000	1.260	22.80	33.80	45.52			53.49*			1973	86213
		0.12			71.4	3.000	0.126	1.000	1.480	21.40	31.30	42.15			56.46*			1973	86213
		0.12			71.4	3.000	0.126	1.080	1.430	17.00	29.20	41.39			51.13			1973	86213
		0.12			71.4	3.000	0.126	1.160	1.500	15.10	29.00	43.20			52.94*			1973	86213
		0.12			72.2	3.000	0.126	1.000	1.250	20.20	33.30	44.85			52.39			1973	86213
		0.12			72.2	3.000	0.126	1.090	1.590	16.90	29.80	42.51			57.41*			1973	86213
		0.12			72.2	3.000	0.126	1.100	1.380	18.50	30.40	43.63			51.68			1973	86213
		0.12			72.6	3.000	0.126	1.000	1.250	20.00	34.40	46.33			54.12*			1973	86213
		0.12			72.6	3.000	0.126	1.180	1.490	17.50	30.40	45.84			55.16*			1973	86213
T651	Plate	0.25	R.T.	T-L	72.6	3.000	0.250	1.180	1.530	---	20.80	31.37	31.0	0.5	38.65	40.5	2.6	1973	86213
		0.25			72.6	3.000	0.251	1.000	1.530	---	22.80	30.71			42.37			1973	86213

* NOTE: NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STANDARD DEVIATION.

TABLE 8.11.2.2 (CONCLUDED)

ALUMINUM 7079 K_C

CONDITION HEAT TREAT	PRODUCT		TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN		CRACK LENGTH		GROSS STRESS		K_{app}			K_C			DATE	REFER
	FORM	THICK (in.)				WIDTH (in.) W	THICK (in.) B	INIT (in.) $2a_o$	FINAL (in.) $2a_f$	ONSET (Ksi) σ_o	MAX (Ksi) σ_{Max}	K_{app} (Ksi$\sqrt{in}$)	K_{app} MEAN	STAN DEV	K_C (Ksi$\sqrt{in}$)	K_C MEAN	STAN DEV		
BUCKLING OF CRACK EDGES NOT RESTRAINED																			
T651	Plate	1.00	R.T.	T-L	71.3	20.000	1.000	7.000	8.880	---	8.50	30.52	31.2	0.9	36.26	38.1	1.2	1973	86213
		1.00			71.3	20.000	1.000	7.000	8.900	---	8.70	31.24			37.18			1973	86213
		1.00			71.3	20.000	1.000	7.000	9.620	---	8.60	30.88			39.18			1973	86213
		1.00			71.3	20.000	1.000	7.000	9.260	---	8.80	31.60			38.83			1973	86213
		1.00			72.2	20.000	1.000	7.000	9.410	---	8.50	30.52			38.01			1973	86213
		1.00			72.2	20.000	1.000	7.000	9.030	---	8.60	30.88			37.18			1973	86213
		1.00			72.2	20.000	1.000	7.000	8.950	---	8.30	29.81			35.63			1973	86213
		1.00			72.2	20.000	1.000	7.000	9.800	---	8.40	30.17			38.89			1973	86213
		1.00			72.6	20.000	1.000	7.000	8.980	---	8.90	31.96			38.31			1973	86213
		1.00			72.6	20.000	1.000	7.000	9.000	---	9.00	32.32			38.81			1973	86213
		1.00			72.6	20.000	1.000	7.000	8.910	---	9.10	32.68			38.92			1973	86213
		1.00			72.6	20.000	1.000	7.000	9.230	---	9.00	32.32			39.61			1973	86213

* NOTE: NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STANDARD DEVIATION.

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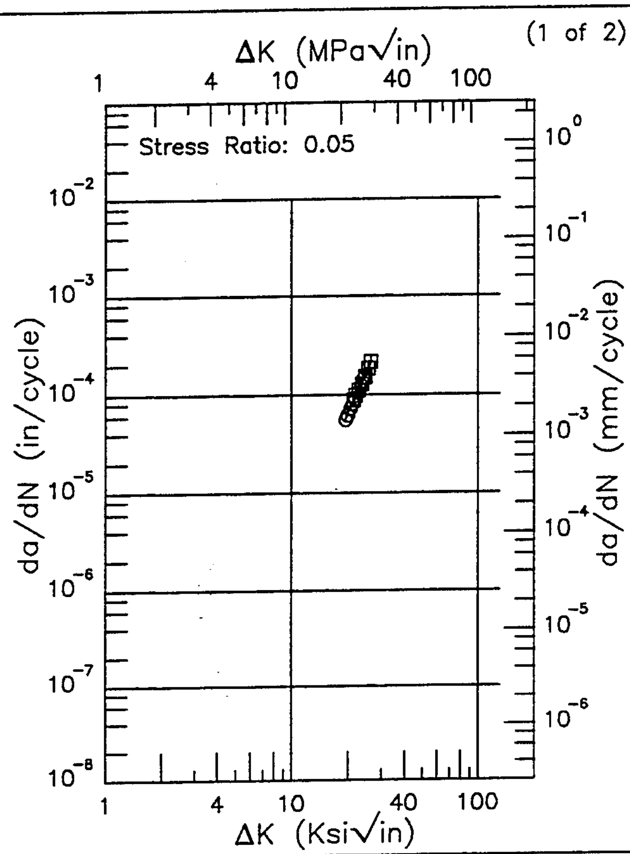
R 7079

Condition/Ht: T6
Form: 0.17 in. Sheet
Specimen Type: CCP (max load specified)
Orientation: L–T
Frequency: 2 Hz
Environment: LAB AIR; RT

Yield Strength: 57 ksi
Ult. Strength:
Specimen Thk: 0.17 in.
Specimen Width: 15 in.
Ref: 86734

(1 of 2)



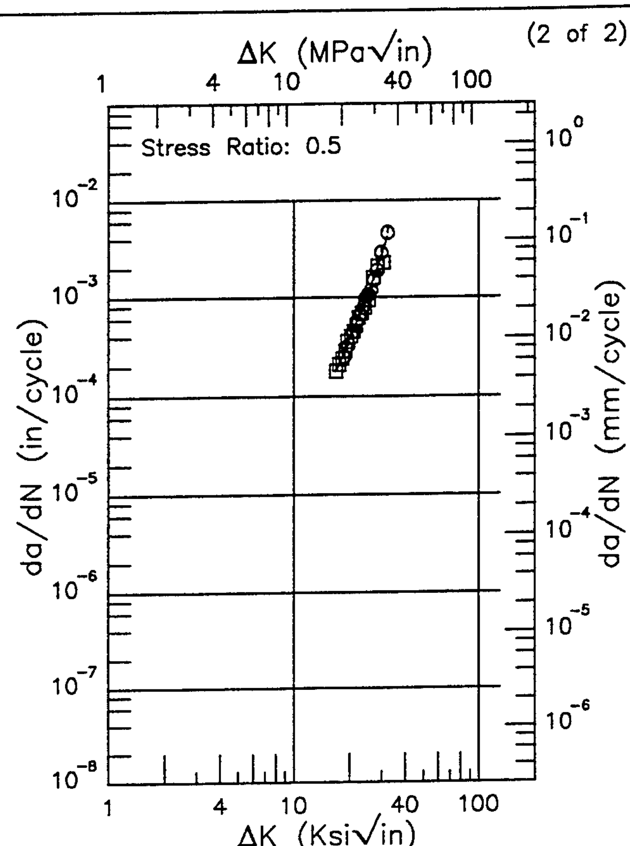
ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
19.31 (min)	55.4
20.	64.8
25.	167.
26.41 (max)	218.

RMS % Error: 2.14

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

(2 of 2)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
16.89 (min)	175.
20.	361.
25.	998.
30.	2653.
31.99 (max)	4165.

RMS % Error: 7.44

Life Prediction Ratio Summary

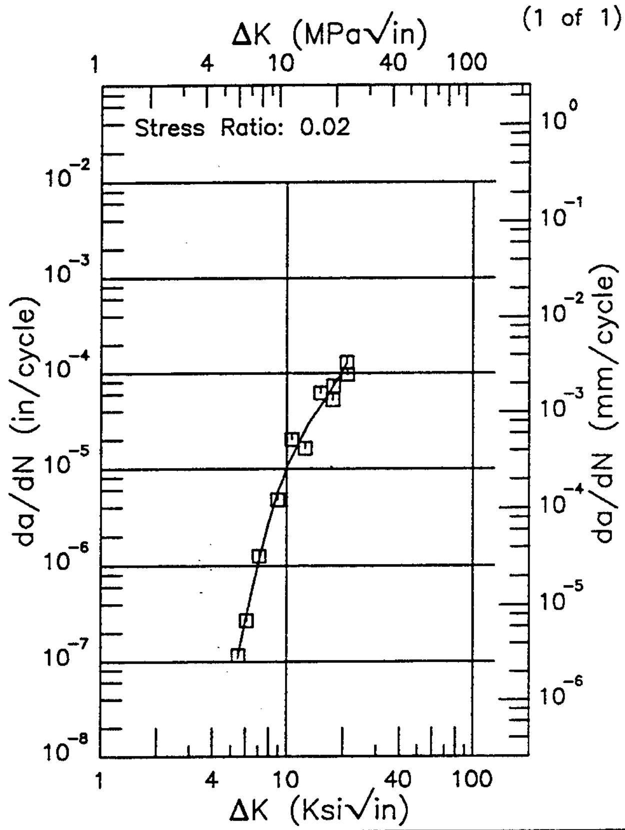
0. .5 .8 1.25 2.

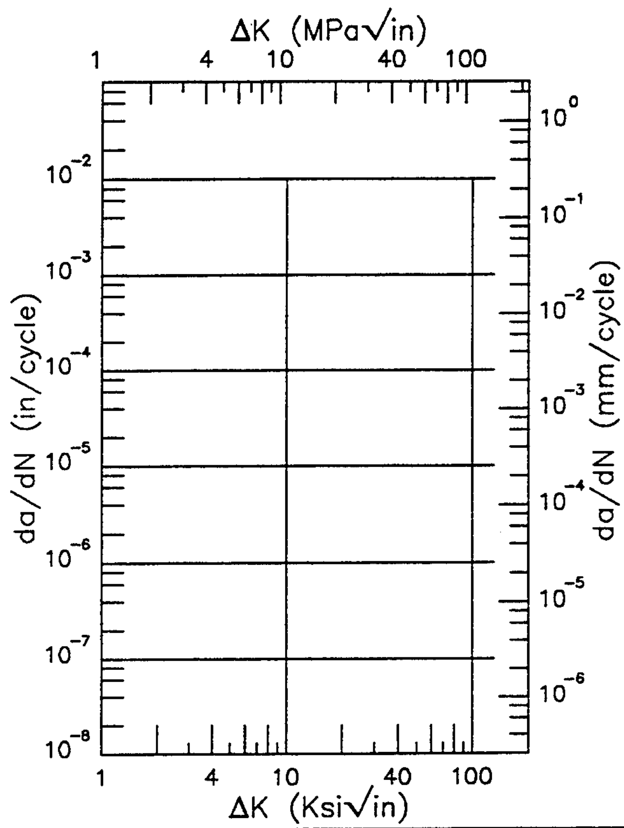
Figure 8.11.3.1.1

Condition/Ht: T6
Form: 1.7 in. Billet
Specimen Type: WOL
Orientation: L–T
Frequency: 1 – 30 Hz
Environment: LAB AIR; RT

Yield Strength: 79 ksi
Ult. Strength: 86 ksi
Specimen Thk: 1.25 in.
Specimen Width: 5 in.
Ref: MA011

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
5.46 (min)	0.107
6.	0.270
7.	1.03
8.	2.79
9.	5.90
10.	10.4
13.	28.9
16.	52.9
20.	108.
20.96 (max)	130.

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error	Life Prediction Ratio Summary
26.18	0. .5 .8 1.25 2.

RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

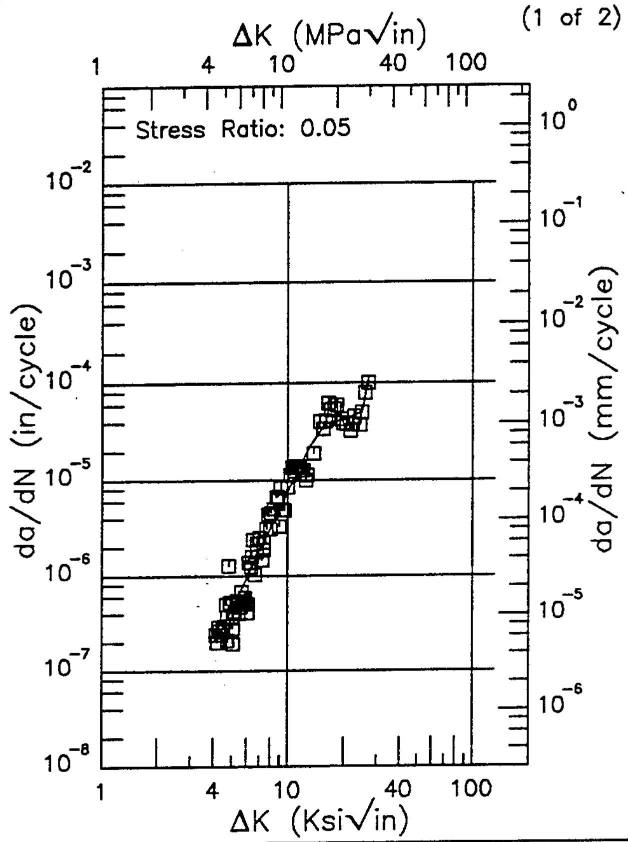
Figure 8.11.3.1.2

R 7079

Condition/Ht: T6
Form: Forging
Specimen Type: CT
Orientation: T–L
Frequency: 9 Hz
Environment: LAB AIR; RT

Yield Strength: 72.6 ksi
Ult. Strength: 83.4 ksi
Specimen Thk: 0.4 in.
Specimen Width:
Ref: BW001

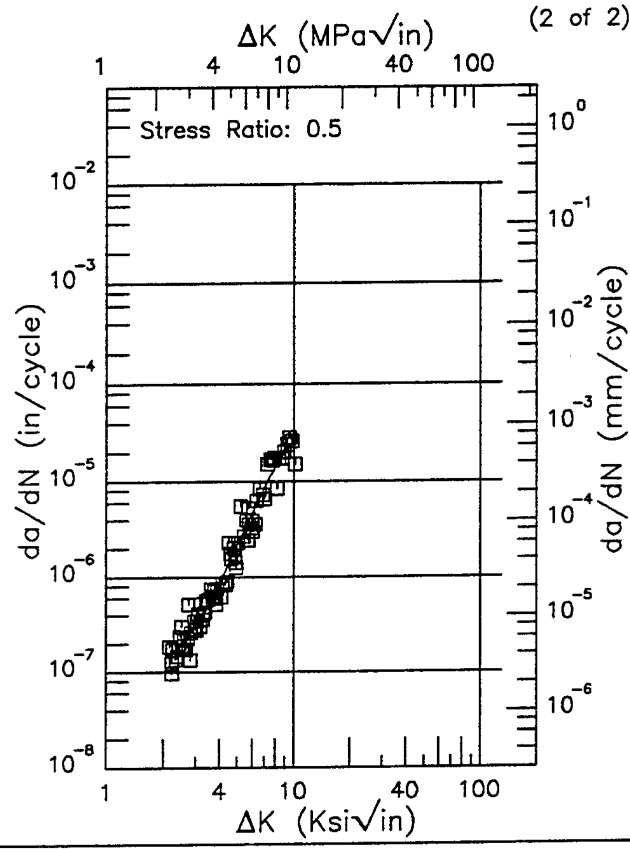
(1 of 2)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
4.14 (min)	0.205
5.	0.441
6.	0.939
7.	1.78
8.	3.10
9.	5.03
10.	7.72
13.	21.5
16.	39.5
20.	42.7
25.	51.4
27.05 (max)	109.

RMS % Error	Life Prediction Ratio Summary
40.40	0. .5 .8 1.25 2.

(2 of 2)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
2.16 (min)	0.152
2.5	0.190
3.	0.303
3.5	0.508
4.	0.848
5.	2.15
6.	4.67
7.	8.67
8.	14.1
9.	20.4
10.	26.8
10.09 (max)	27.4

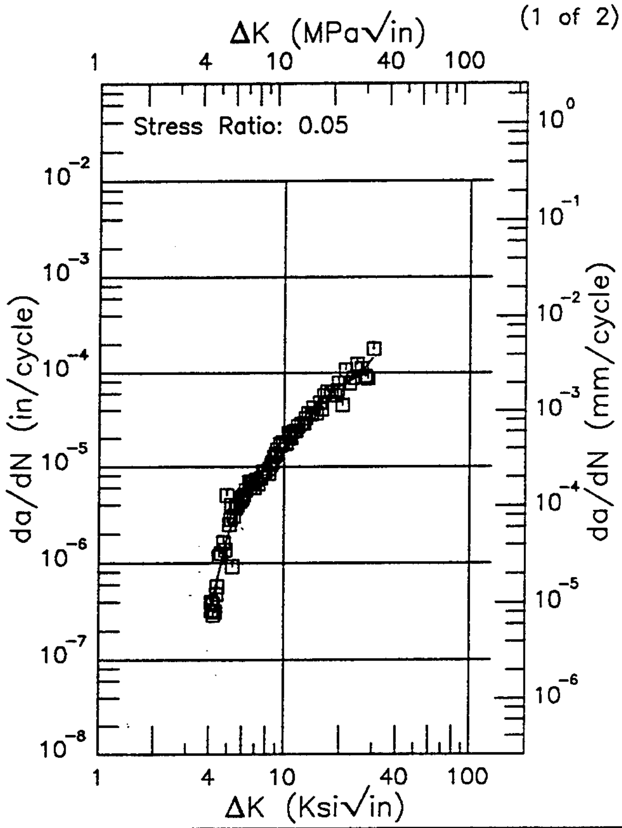
RMS % Error	Life Prediction Ratio Summary
31.65	0. .5 .8 1.25 2.

Figure 8.11.3.1.3

Condition/Ht: T6
Form: Forging
Specimen Type: CT
Orientation: T–L
Frequency: 9 Hz
Environment: H.H.A.; RT

Yield Strength: 68.8 ksi
Ult. Strength: 78.7 ksi
Specimen Thk: 0.4 in.
Specimen Width: 4.5 in.
Ref: BW001

(1 of 2)



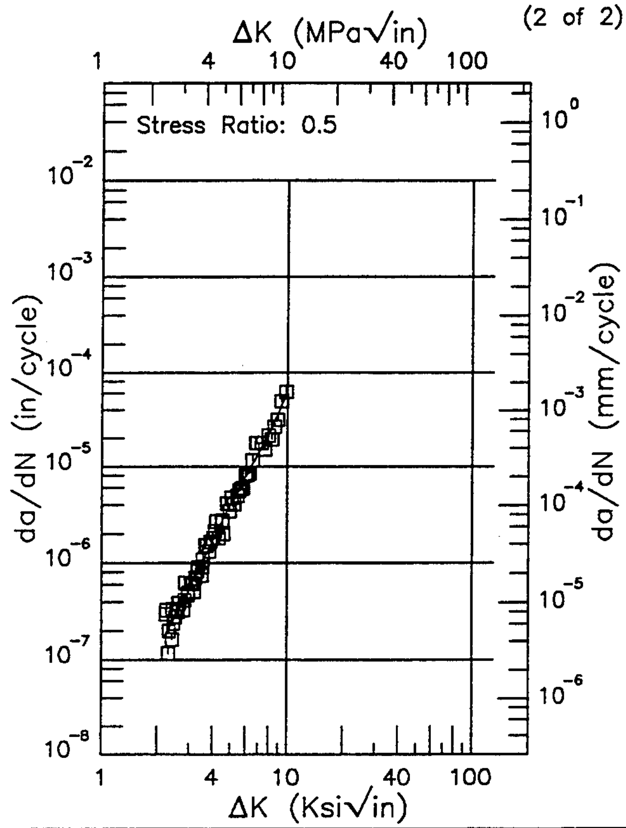
ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
4.09 (min)	0.350
5.	1.87
6.	4.77
7.	7.83
8.	10.5
9.	13.1
10.	15.9
13.	30.5
16.	51.7
20.	72.9
25.	92.3
29.94 (max)	145.

RMS % Error: 29.46

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

(2 of 2)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
2.22 (min)	0.182
2.5	0.273
3.	0.537
3.5	0.983
4.	1.67
5.	4.02
6.	7.84
7.	13.3
8.	21.8
9.	36.9
9.83 (max)	59.3

RMS % Error: 21.27

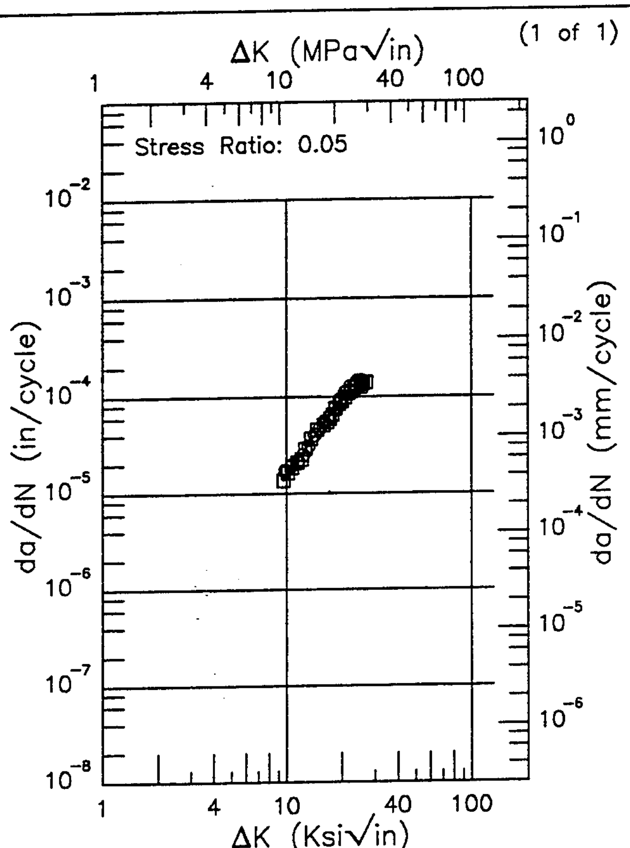
Life Prediction Ratio Summary

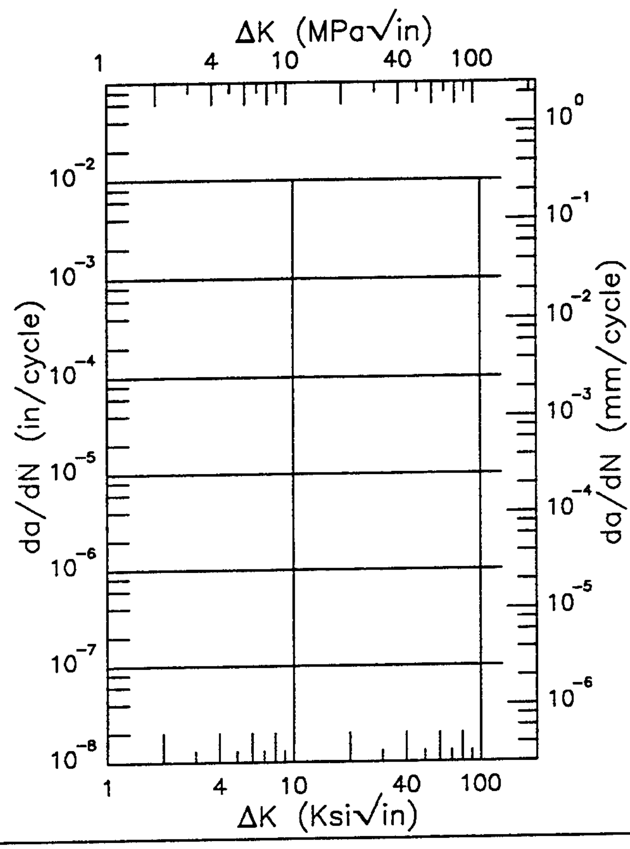
0. .5 .8 1.25 2.

Figure 8.11.3.1.4

R 7079

Condition/Ht: T651	Yield Strength: 72.6 ksi
Form: 0.16 in. Sheet	Ult. Strength: 79.1 ksi
Specimen Type: CCP (max load specified)	Specimen Thk: 0.16 in.
Orientation: L–T	Specimen Width: 14 – 14.01 in.
Frequency: 2 Hz	Ref: 86734
Environment: LAB AIR; RT	





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
9.57 (min)	14.7
10.	16.1
13.	30.4
16.	53.0
20.	93.9
25.	135.
26.66 (max)	137.

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error	Life Prediction Ratio Summary
5.87	0. .5 .8 1.25 2.

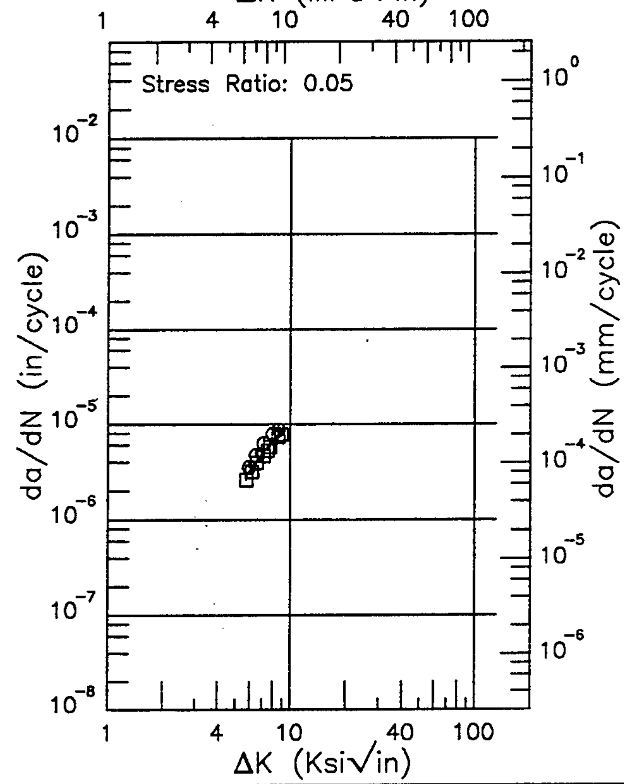
RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

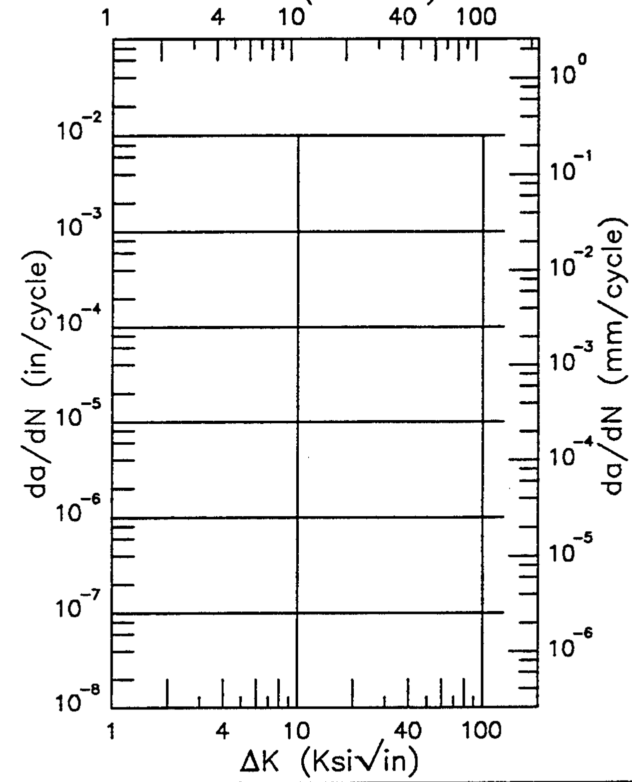
Figure 8.11.3.1.5

Condition/Ht: T651
Form: 0.16 in. Sheet
Specimen Type: CCP (max load specified)
Orientation: L-T
Frequency: 2 Hz
Environment: LAB AIR; RT

Yield Strength:
Ult. Strength: 79.1 ksi
Specimen Thk: 0.16 – 0.161 in.
Specimen Width: 3 in.
Ref: 86734

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
5.75 (min)	2.88
6.	3.20
7.	4.87
8.	6.81
8.92 (max)	8.25

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error	Life Prediction Ratio Summary
12.23	0. .5 .8 1.25 2.

RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

Figure 8.11.3.1.6

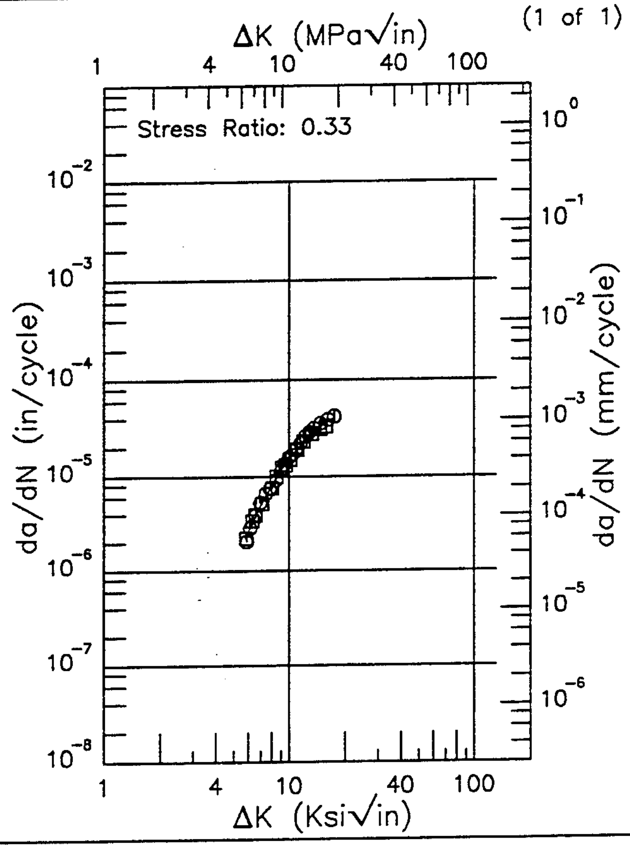
R

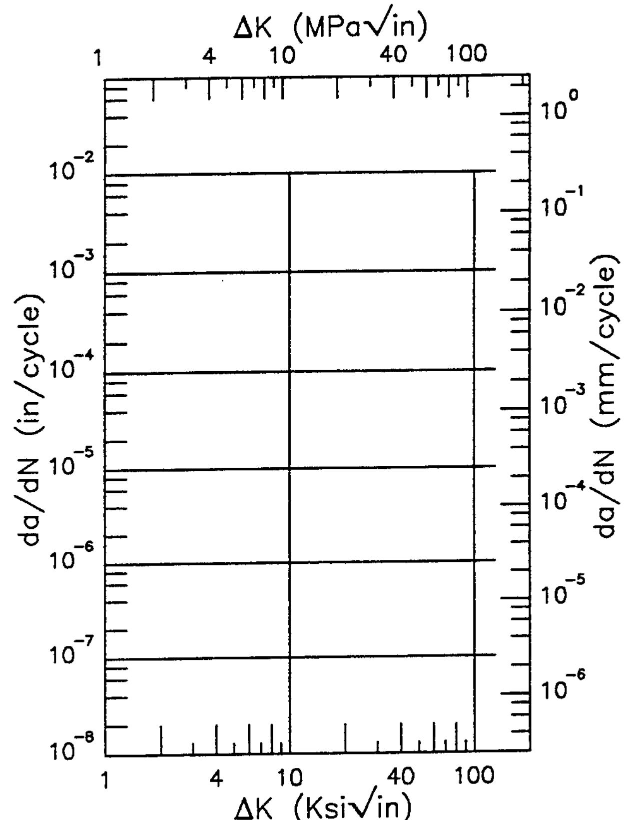
7079

Condition/Ht: T652
Form: 6 in. Forging
Specimen Type: CCP (max load specified)
Orientation: L-S
Frequency: 5.2 Hz
Environment: LAB AIR; RT

Yield Strength:
Ult. Strength:
Specimen Thk: 0.75 in.
Specimen Width: 3 in.
Ref: 77720

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
5.82 (min)	2.24
6.	2.58
7.	4.98
8.	8.05
9.	11.6
10.	15.5
13.	27.7
16.	37.4
17.35 (max)	39.9

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error	Life Prediction Ratio Summary
5.31	0. .5 .8 1.25 2.

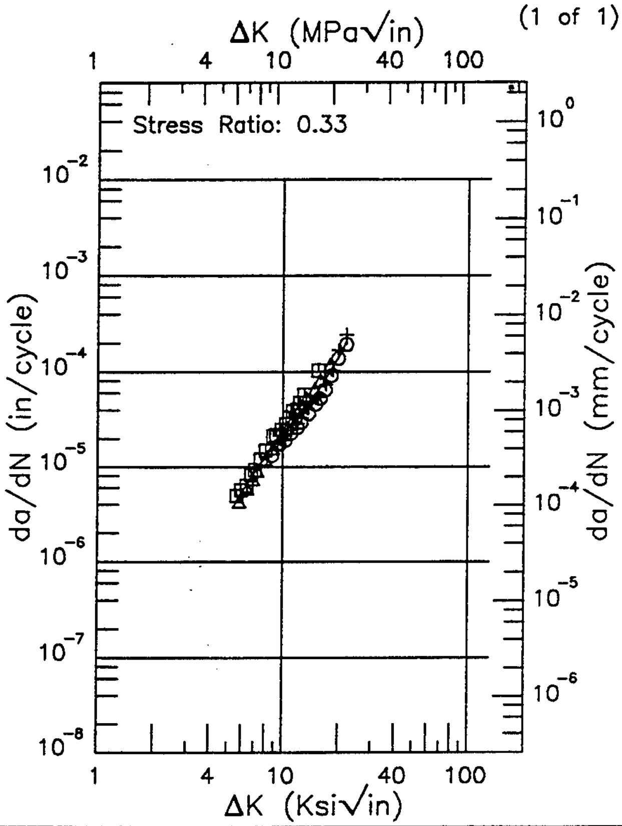
RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

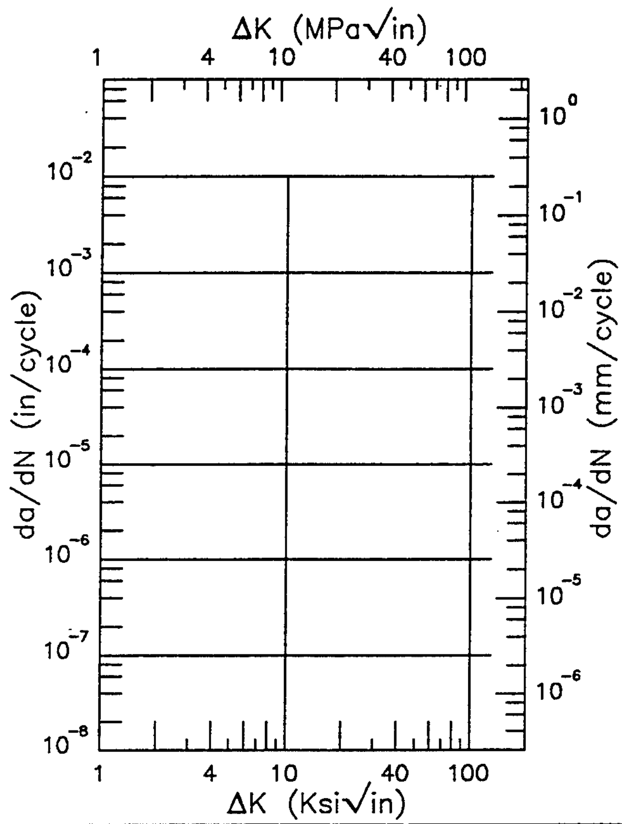
Figure 8.11.3.1.7

Condition/Ht: T652
Form: 6 in. Forging
Specimen Type: CCP (max load specified)
Orientation: L–T
Frequency: 5.2 Hz
Environment: LAB AIR; RT

Yield Strength:
Ult. Strength:
Specimen Thk: 0.75 in.
Specimen Width: 3 in.
Ref: 77720

(1 of 1)



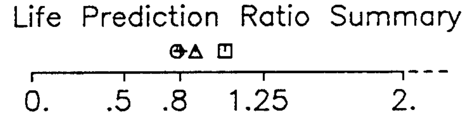


ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)
5.59 (min)	4.25
6.	5.40
7.	8.71
8.	12.7
9.	17.2
10.	22.4
13.	41.8
16.	69.9
20.	145.
21.86 (max)	213.

ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)

RMS % Error
18.41

Life Prediction Ratio Summary



RMS % Error

Life Prediction Ratio Summary

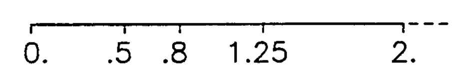


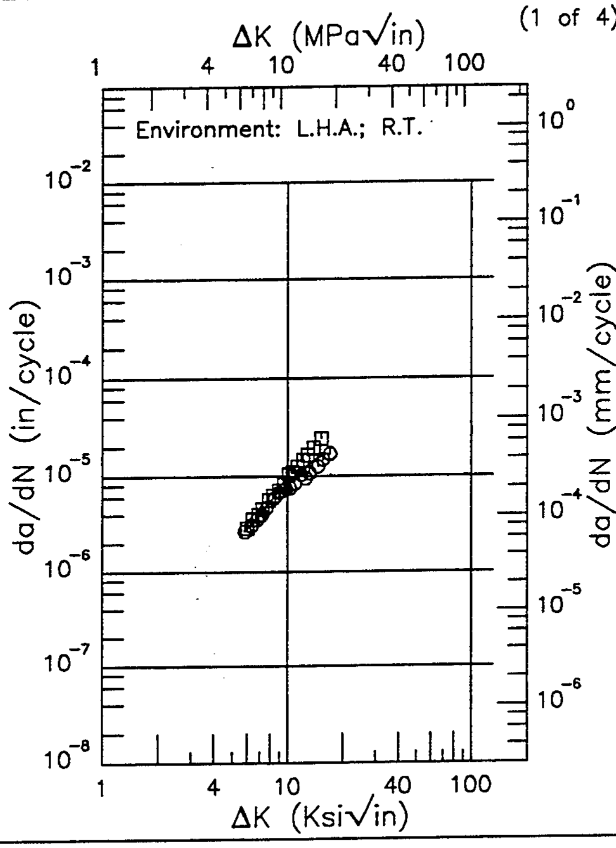
Figure 8.11.3.1.8

E 7079

Condition/Ht: T652
Form: 6 in. Forging
Specimen Type: CCP (max load specified)
Orientation: T–S
Stress Ratio: 0.33
Frequency: 5.2 Hz

Yield Strength:
Ult. Strength:
Specimen Thk: 0.75 in.
Specimen Width: 3 in.
Ref: 77720

(1 of 4)



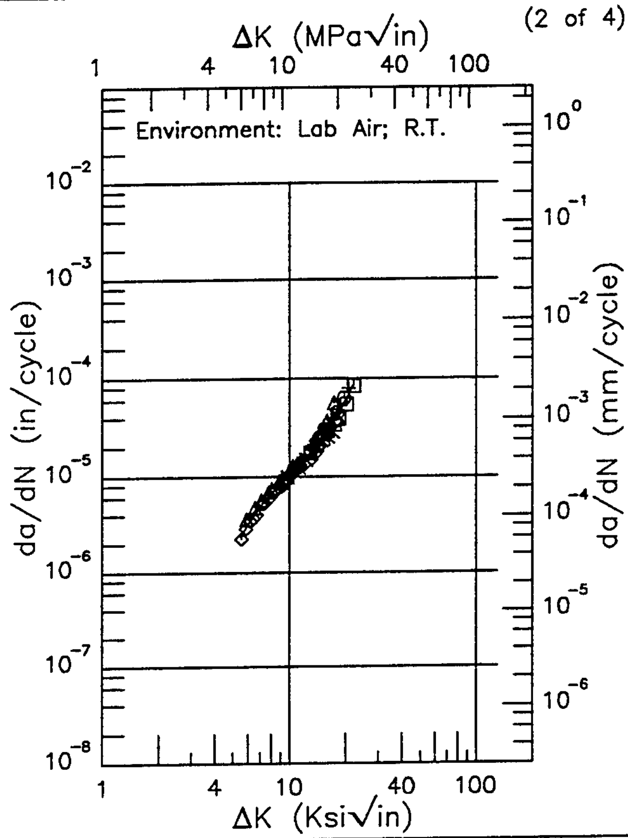
ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
5.83 (min)	2.69
6.	2.84
7.	3.99
8.	5.47
9.	7.07
10.	8.60
13.	13.5
16.	17.1
16.92 (max)	16.7

RMS % Error 16.33

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

(2 of 4)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
5.53 (min)	2.40
6.	3.19
7.	4.94
8.	6.69
9.	8.44
10.	10.3
13.	17.8
16.	30.1
20.	60.5
22.12 (max)	90.1

RMS % Error 11.47

Life Prediction Ratio Summary

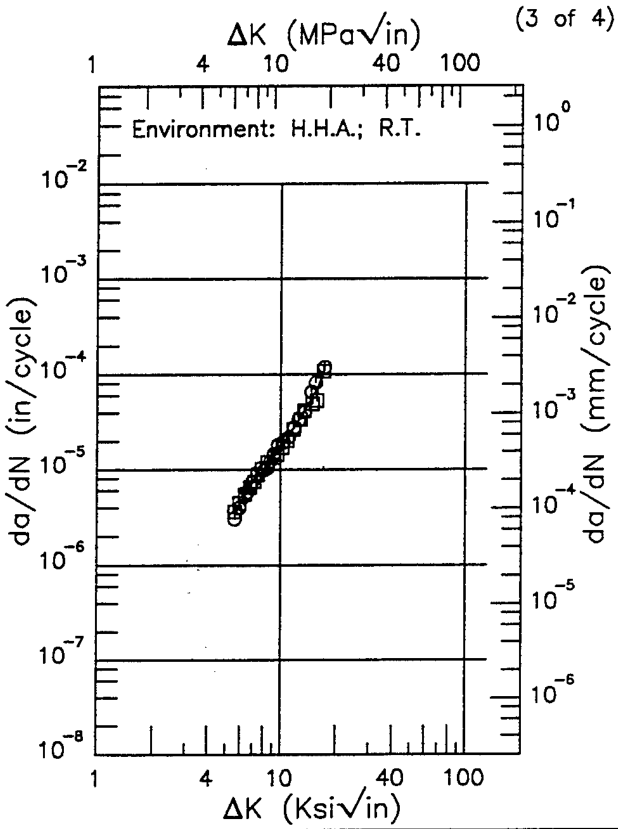
0. .5 .8 1.25 2.

Figure 8.11.3.1.9

Condition/Ht: T652
Form: 6 in. Forging
Specimen Type: CCP (max load specified)
Orientation: T–S
Stress Ratio: 0.33
Frequency: 5.2 Hz

Yield Strength:
Ult. Strength:
Specimen Thk: 0.75 in.
Specimen Width: 3 in.
Ref: 77720

(3 of 4)



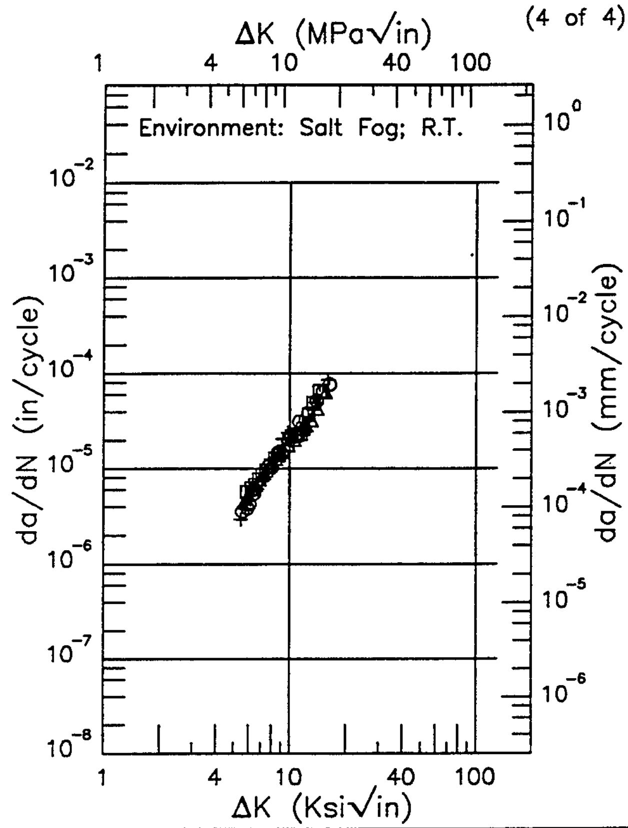
ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
5.59 (min)	3.40
6.	4.49
7.	7.23
8.	10.0
9.	13.2
10.	17.1
13.	36.8
16.	74.8
17.28 (max)	113.

RMS % Error 8.40

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

(4 of 4)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
5.46 (min)	3.35
6.	4.69
7.	7.88
8.	11.7
9.	15.7
10.	19.4
13.	37.9
16.	77.1
16.26 (max)	79.3

RMS % Error 10.67

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

Figure 8.11.3.1.9 (Concluded)

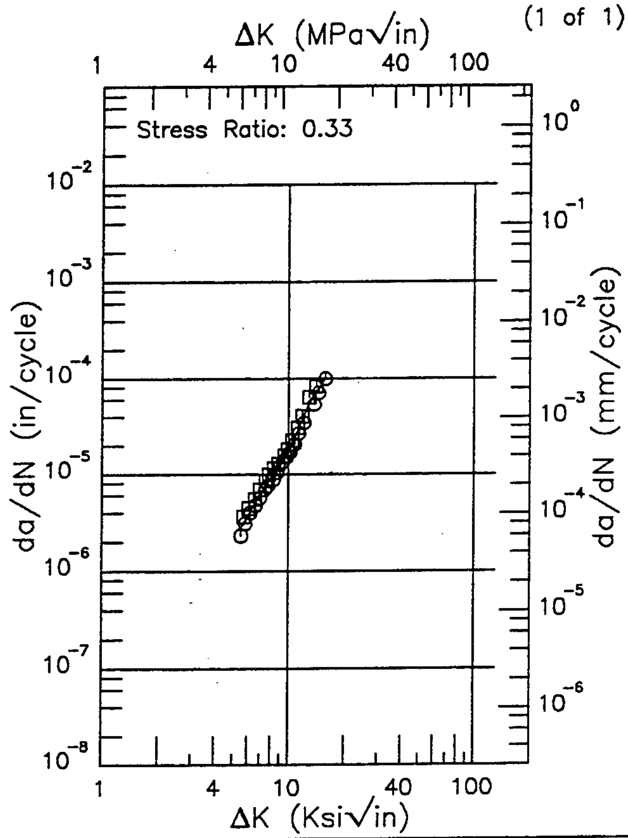
R

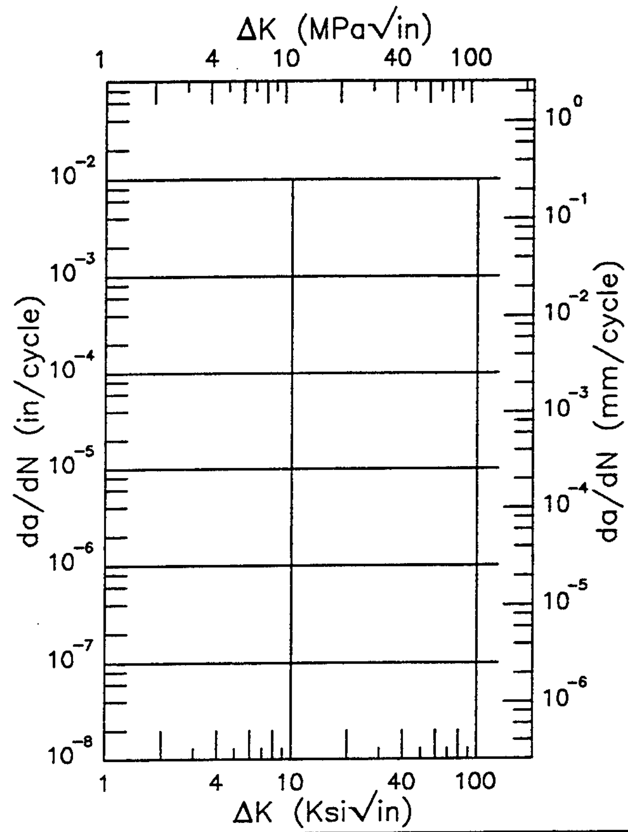
7079

Condition/Ht: T652
Form: 6 in. Forging
Specimen Type: CCP (max load specified)
Orientation: T–L
Frequency: 5.2 Hz
Environment: LAB AIR; RT

Yield Strength:
Ult. Strength:
Specimen Thk: 0.75 in.
Specimen Width: 3 in.
Ref: 77720

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
5.52 (min)	2.73
6.	3.70
7.	6.24
8.	9.22
9.	12.4
10.	17.1
13.	56.0
15.68 (max)	98.5

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error	Life Prediction Ratio Summary
11.14	0. .5 .8 1.25 2.

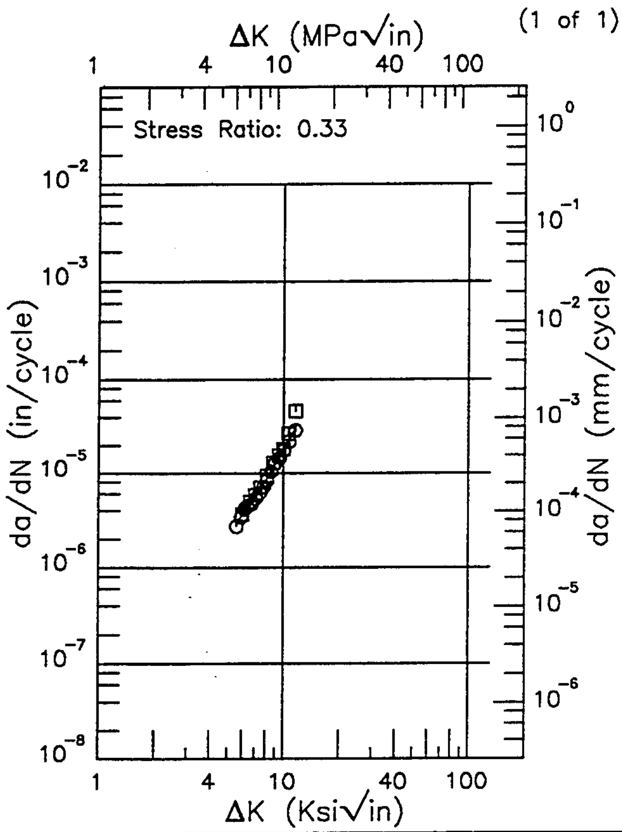
RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

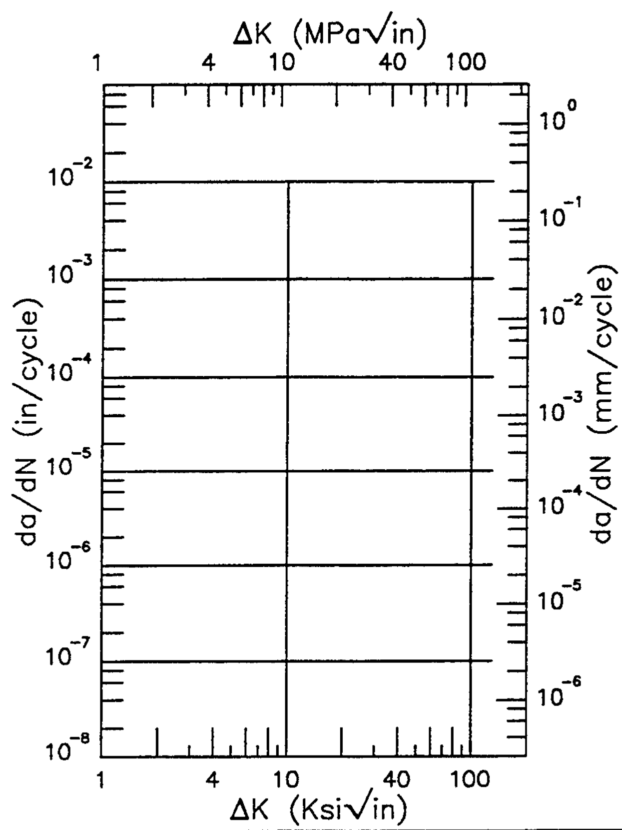
Figure 8.11.3.1.10

Condition/Ht: T652
Form: 6 in. Forging
Specimen Type: CCP (max load specified)
Orientation: S–T
Frequency: 5.2 Hz
Environment: LAB AIR; RT

Yield Strength:
Ult. Strength:
Specimen Thk: 0.75 in.
Specimen Width: 3 in.
Ref: 77720

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
5.58 (min)	2.93
6.	3.50
7.	5.44
8.	8.40
9.	12.6
10.	18.3
11.52 (max)	29.9

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error	Life Prediction Ratio Summary
12.33	0. .5 .8 1.25 2.

RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

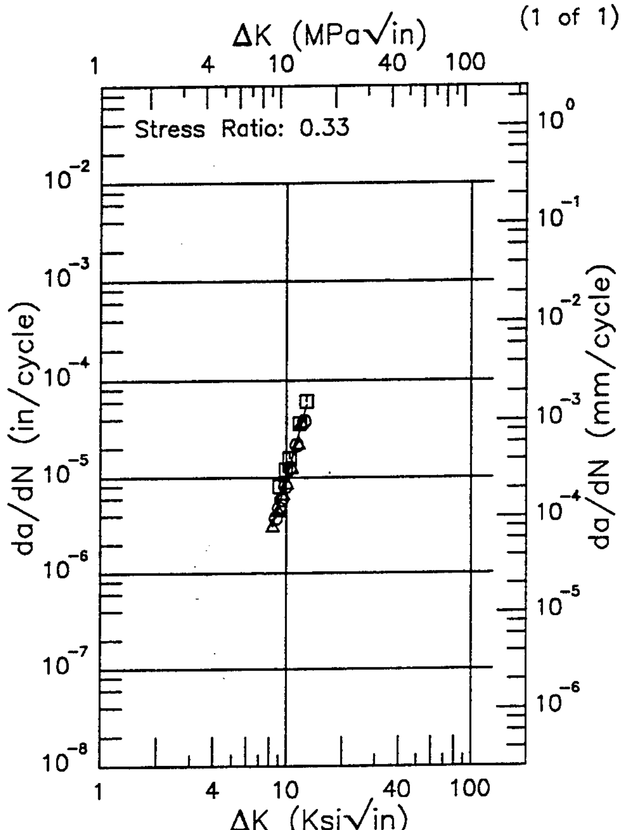
Figure 8.11.3.1.11

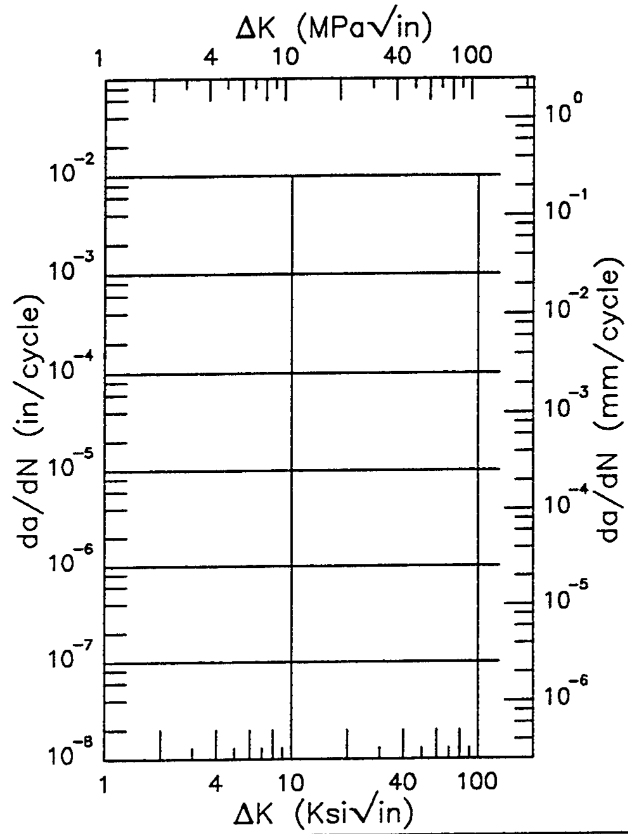
R 7079

Condition/Ht: T652
Form: 6 in. Forging
Specimen Type: CCP (max load specified)
Orientation: S−L
Frequency: 5.2 Hz
Environment: LAB AIR; RT

Yield Strength:
Ult. Strength:
Specimen Thk: 0.75 in.
Specimen Width: 3 in.
Ref: 77720

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
8.37 (min)	3.13
9.	4.98
10.	9.73
12.82 (max)	56.4

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error
17.76

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

RMS % Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

Figure 8.11.3.1.12

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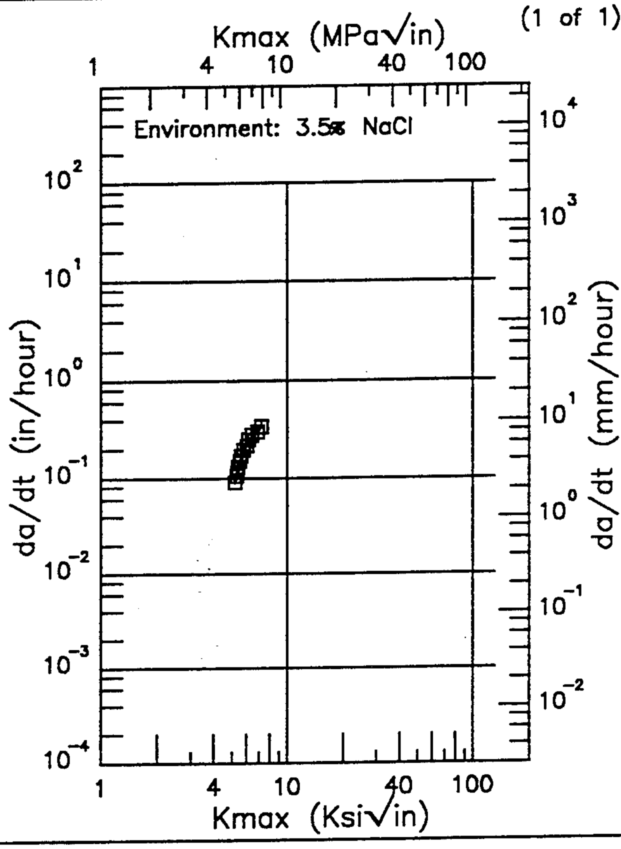
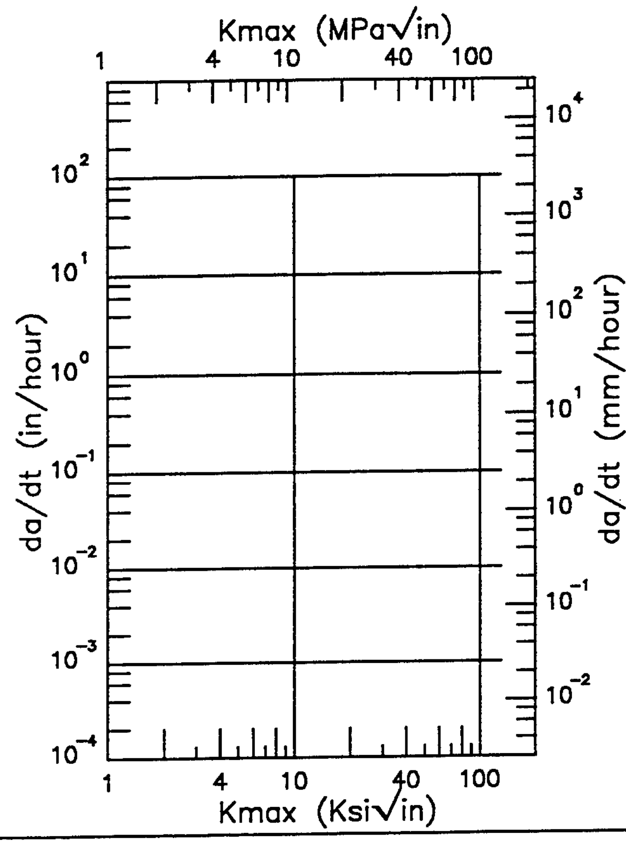
7079

Condition/Ht: T6
Form: 1 in. Plate
Specimen Type: DCB
Orientation:
Yield Strength:
Ult. Strength:

Specimen Thk: 1 in.
Specimen Width: 3.5 in.
Ao:
KIscc: 4.3 ksi
Ref: 84330

(1 of 1)





Kmax (Ksi√in)	da/dt (10^{-3} in/hour)
5.20 (min)	90.0
6.	230.
7.	313.
7.20 (max)	336.

Kmax (Ksi√in)	da/dt (10^{-3} in/hour)

RMS % Error
8.38

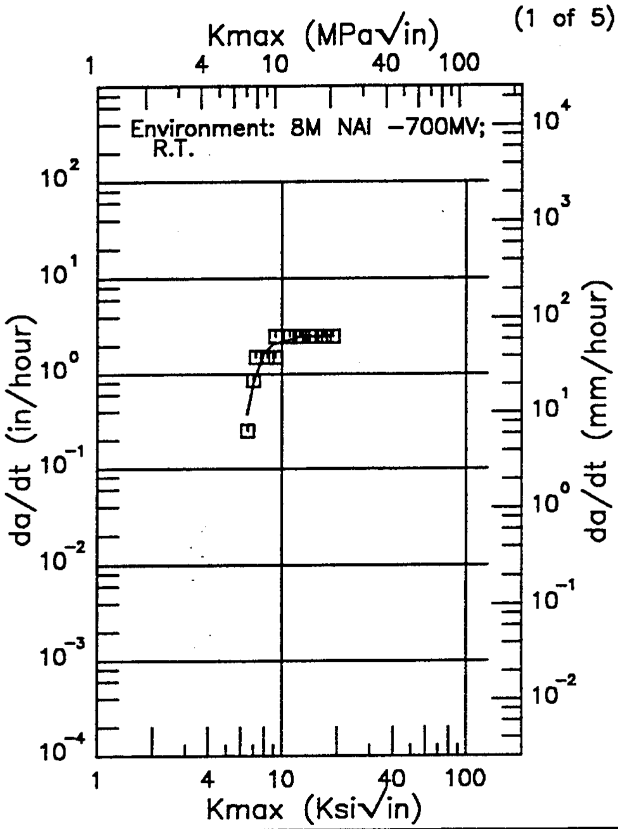
RMS % Error

Figure 8.11.3.2.1

Condition/Ht: T651
Form:
Specimen Type: DCB
Orientation: S–L
Yield Strength:
Ult. Strength:

Specimen Thk: 1 in.
Specimen Width: 5 in.
Ao:
KIscc:
Ref: 76442;78313

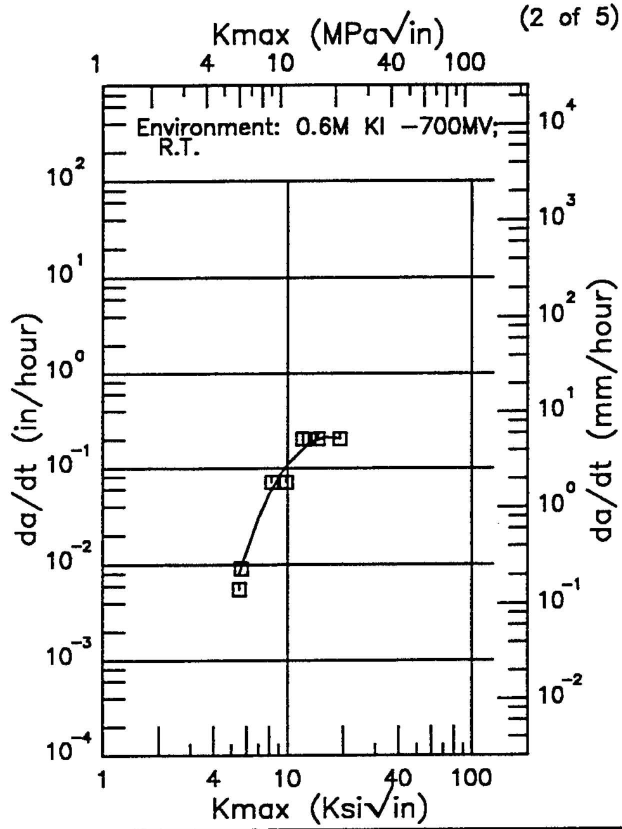
(1 of 5)



Kmax (Ksi√in)	da/dt (10^{-3}in/hour)
6.50 (min)	377.
7.	804.
8.	1708.
9.	2131.
10.	2194.
13.	2549.
16.	2512.
19.00 (max)	2532.

RMS % Error
22.8

(2 of 5)



Kmax (Ksi√in)	da/dt (10^{-3}in/hour)
5.50 (min)	8.11
6.	13.6
7.	30.3
8.	53.7
9.	81.4
10.	110.
13.	182.
16.	211.
19.20 (max)	205.

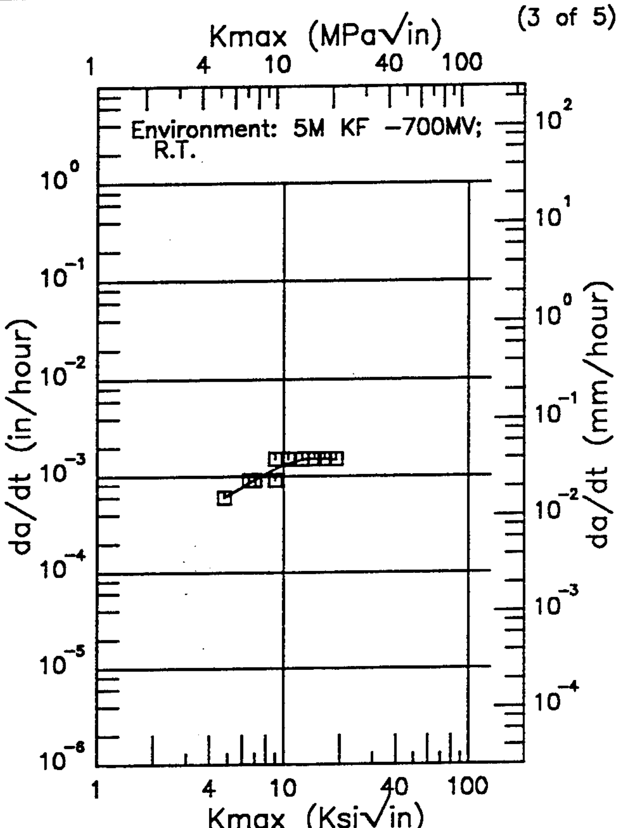
RMS % Error
20.6

Figure 8.11.3.2.2

7079

Condition/Ht: T651	Specimen Thk: 1 in.
Form:	Specimen Width: 5 in.
Specimen Type: DCB	A_o:
Orientation: S–L	K_{Iscc}:
Yield Strength:	Ref: 76442;78313
Ult. Strength:	

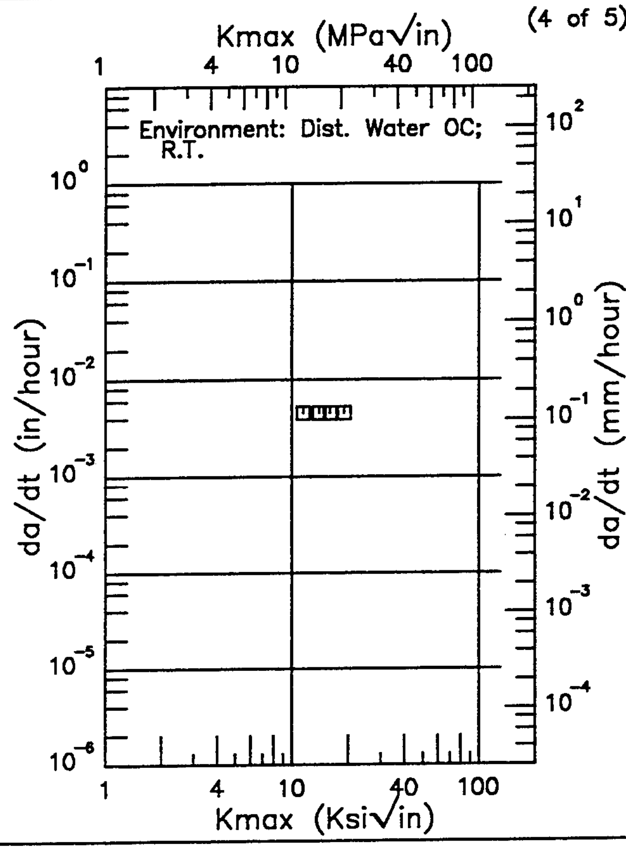
(3 of 5)



Kmax (Ksi√in)	da/dt (10^{-3}in/hour)
4.80 (min)	0.608
5.	0.634
6.	0.773
7.	0.922
8.	1.07
9.	1.20
10.	1.32
13.	1.50
16.	1.52
19.00 (max)	1.49

RMS % Error
11.93

(4 of 5)



Kmax (Ksi√in)	da/dt (10^{-3}in/hour)

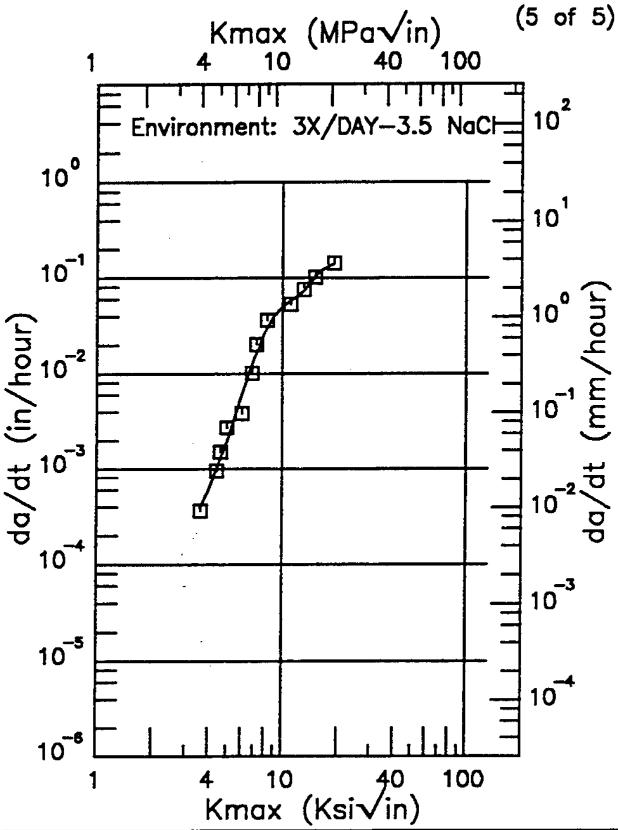
RMS % Error

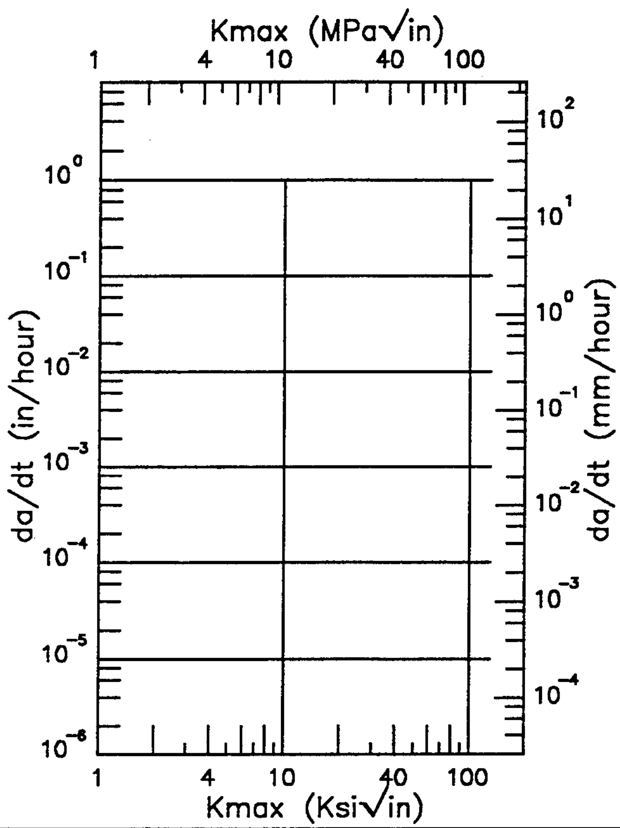
Figure 8.11.3.2.2 (Continued)

Condition/Ht: T651
Form:
Specimen Type: DCB
Orientation: S–L
Yield Strength:
Ult. Strength:

Specimen Thk: 1 in.
Specimen Width: 5 in.
A_0:
K_{Iscc}:
Ref: 76442;78313

(5 of 5)





Kmax (Ksi√in)	da/dt (10^{-3}in/hour)
3.60 (min)	0.395
4.	0.599
5.	1.98
6.	5.97
7.	14.4
8.	27.0
9.	40.2
10.	50.1
13.	72.2
16.	119.
19.00 (max)	140.

Kmax (Ksi√in)	da/dt (10^{-3}in/hour)

RMS % Error	
19.31	

RMS % Error	

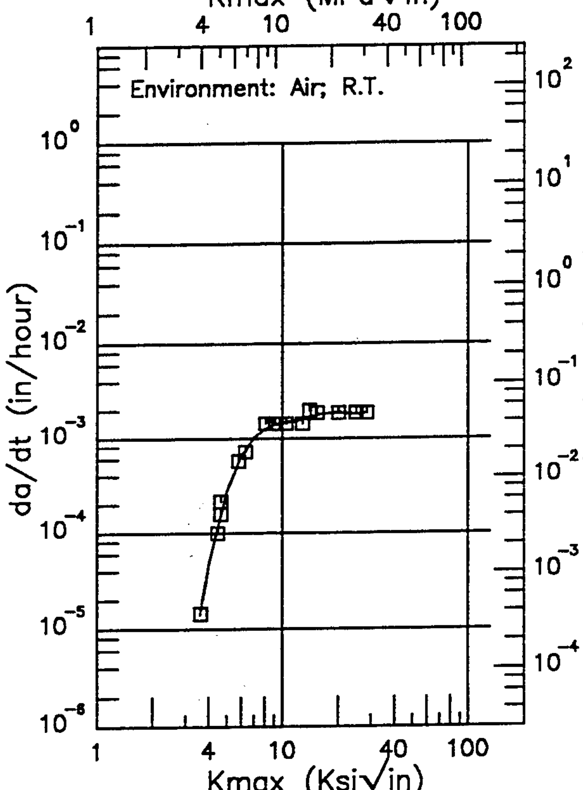
Figure 8.11.3.2.2 (Concluded)

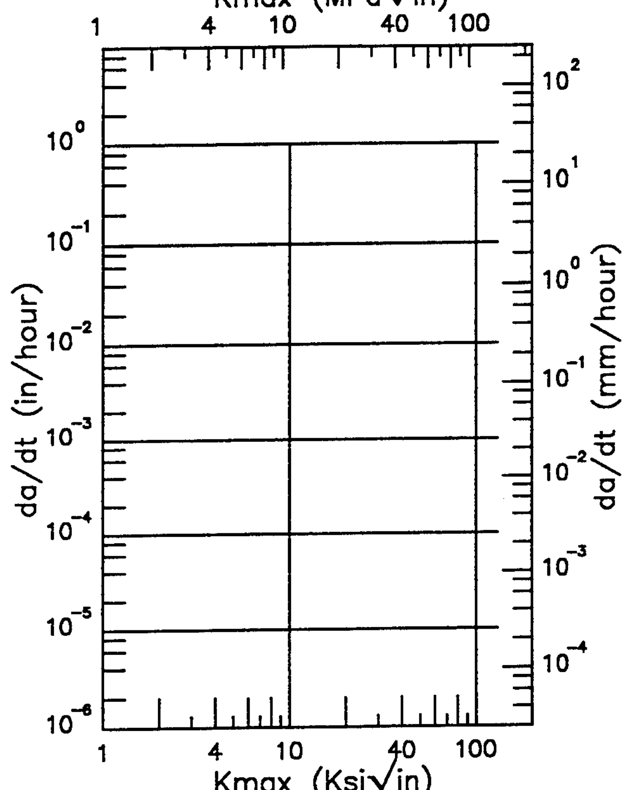
7079

Condition/Ht: T651
Form: 1 in. Plate
Specimen Type: DCB
Orientation: T–L
Yield Strength: 65 ksi
Ult. Strength:

Specimen Thk:
Specimen Width: 11.8 in.
Ao:
KIscc:
Ref: 85543

(1 of 1)





Kmax (Ksi√in)	da/dt (10^{-3}in/hour)
3.60 (min)	0.0140
4.	0.0451
5.	0.269
6.	0.654
7.	1.02
8.	1.27
9.	1.40
10.	1.47
13.	1.62
16.	1.81
20.	1.91
25.	1.81
28.50 (max)	1.87

Kmax (Ksi√in)	da/dt (10^{-3}in/hour)

RMS % Error
12.77

RMS % Error

Figure 8.11.3.2.3

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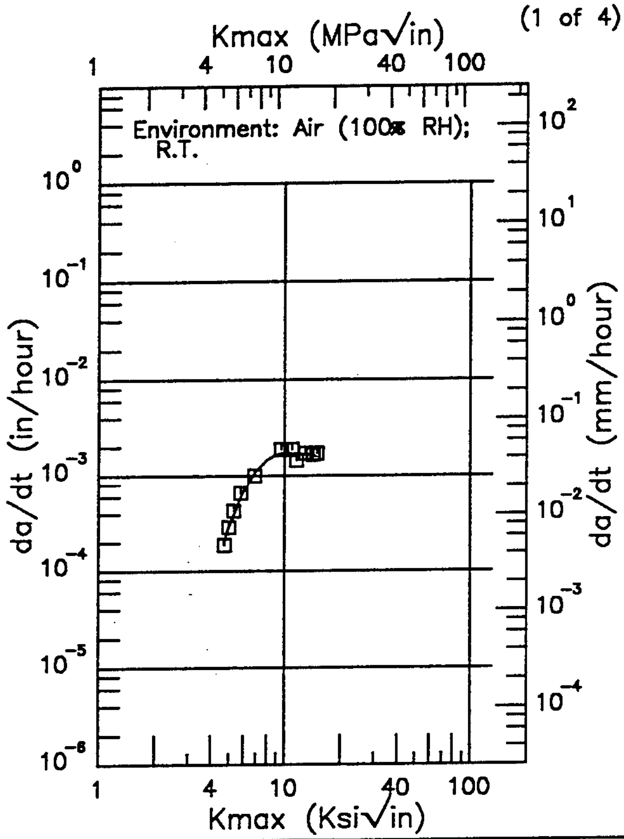
7079

Condition/Ht: T651
Form: 1 in. Plate
Specimen Type: DCB
Orientation: T–L
Yield Strength: 65 ksi
Ult. Strength:

Specimen Thk:
Specimen Width: 11.8 in.
Ao:
KIscc:
Ref: 85543

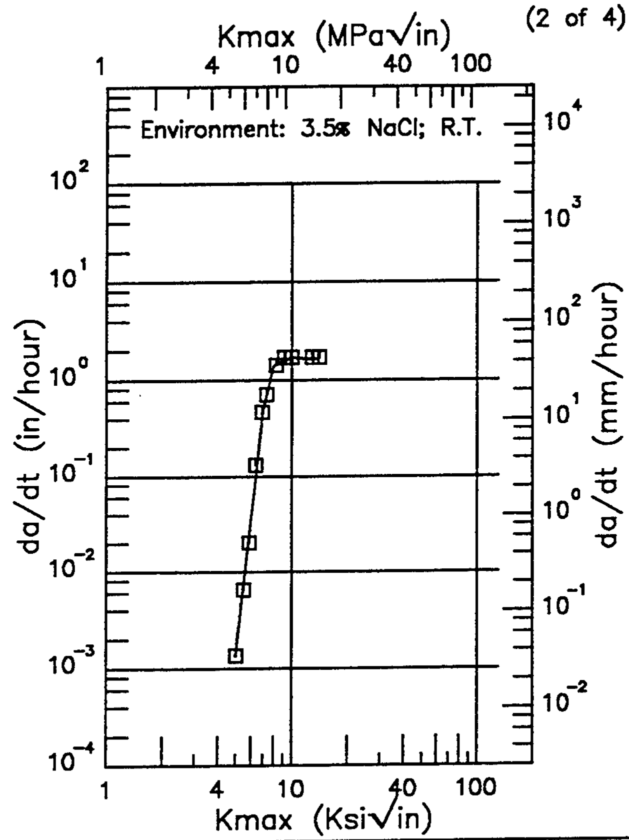
(1 of 4)



Kmax (Ksi√in)	da/dt (10^{-3}in/hour)
4.70 (min)	0.200
5.	0.292
6.	0.694
7.	1.12
8.	1.45
9.	1.65
10.	1.75
13.	1.68
14.80 (max)	1.58

RMS % Error
8.41

(2 of 4)



Kmax (Ksi√in)	da/dt (10^{-3}in/hour)
5.00 (min)	1.34
6.	33.1
7.	490.
8.	1392.
9.	1574.
10.	1724.
13.	1639.
14.10 (max)	1700.

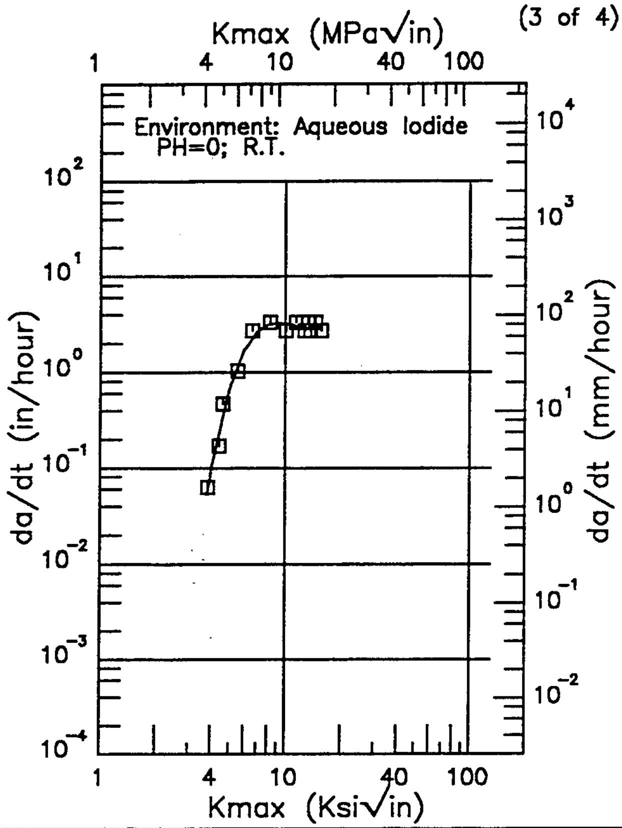
RMS % Error
12.88

Figure 8.11.3.2.4

Condition/Ht: T651
Form: 1 in. Plate
Specimen Type: DCB
Orientation: T–L
Yield Strength: 65 ksi
Ult. Strength:

Specimen Thk:
Specimen Width: 11.8 in.
A_o:
K_{Iscc}:
Ref: 85543

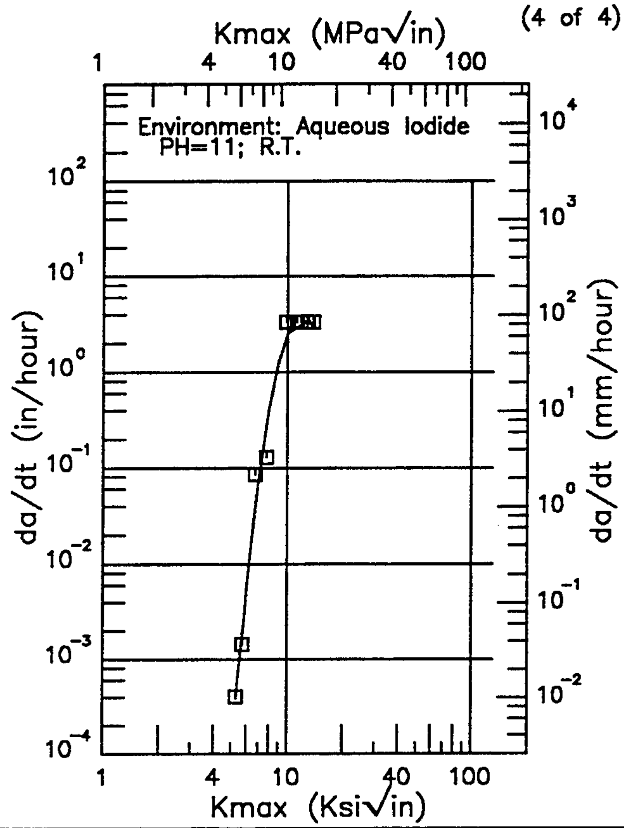
(3 of 4)



Kmax (Ksi√in)	da/dt (10^{-3}in/hour)
3.80 (min)	53.2
4.	96.6
5.	676.
6.	1713.
7.	2630.
8.	3125.
9.	3263.
10.	3205.
13.	2889.
15.50 (max)	2994.

RMS % Error 17.85

(4 of 4)



Kmax (Ksi√in)	da/dt (10^{-3}in/hour)
5.30 (min)	0.385
6.	5.26
7.	73.5
8.	419.
9.	1283.
10.	2511.
13.	3487.
13.70 (max)	2963.

RMS % Error 54.44

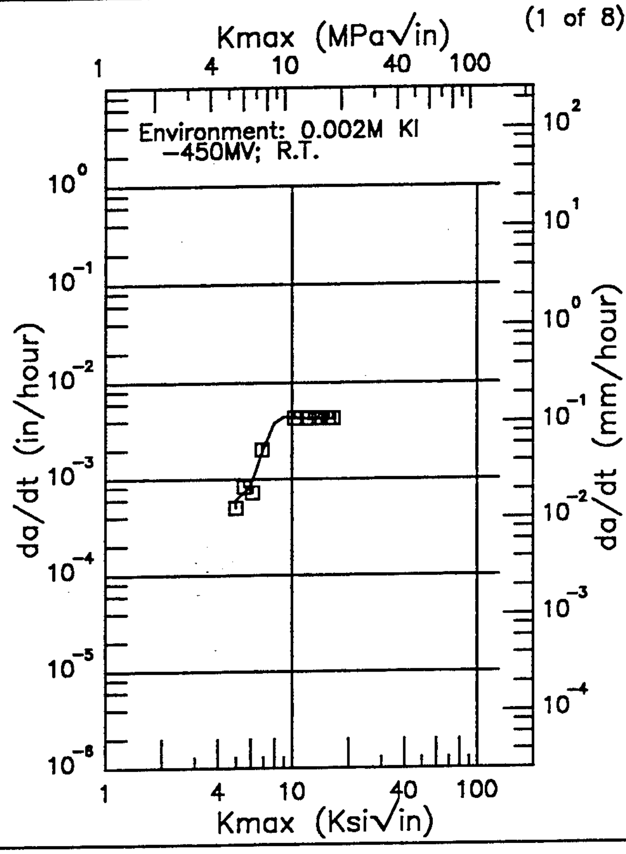
Figure 8.11.3.2.4 (Concluded)

7079

Condition/Ht: T651
Form: 1 in. Plate
Specimen Type: DCB
Orientation: T–L
Yield Strength:
Ult. Strength:

Specimen Thk:
Specimen Width:
A_0:
K_{Iscc}:
Ref: 85543

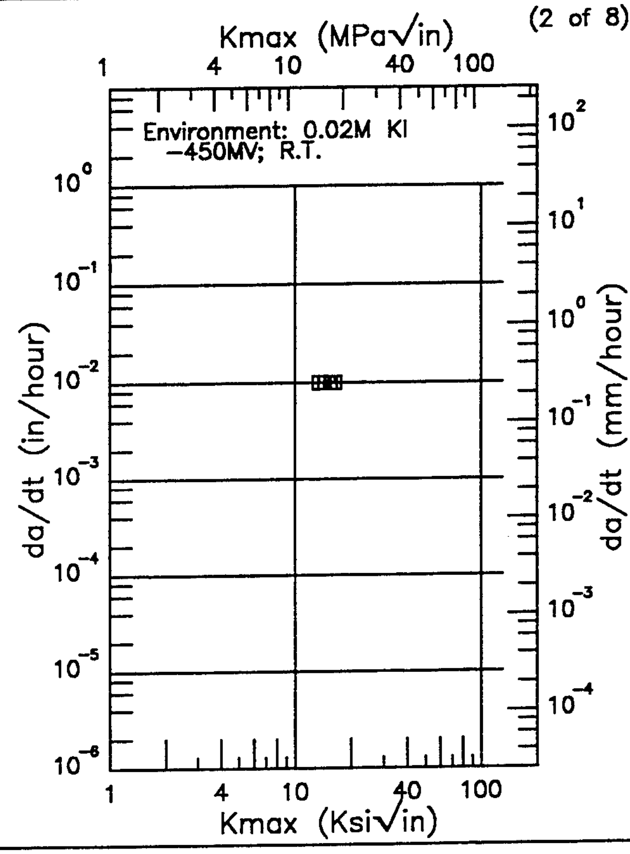
(1 of 8)



Kmax (Ksi√in)	da/dt (10^{-3}in/hour)
5.00 (min)	0.599
6.	0.860
7.	2.07
8.	3.80
9.	4.47
10.	4.34
13.	4.27
16.	4.24
16.40 (max)	4.27

RMS % Error
11.03

(2 of 8)



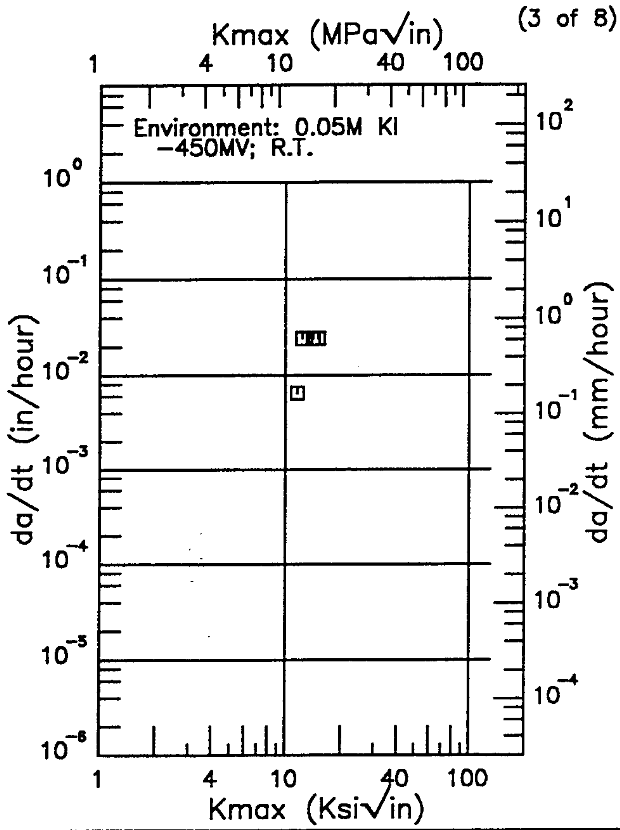
Kmax (Ksi√in)	da/dt (10^{-3}in/hour)

RMS % Error

Figure 8.11.3.2.5

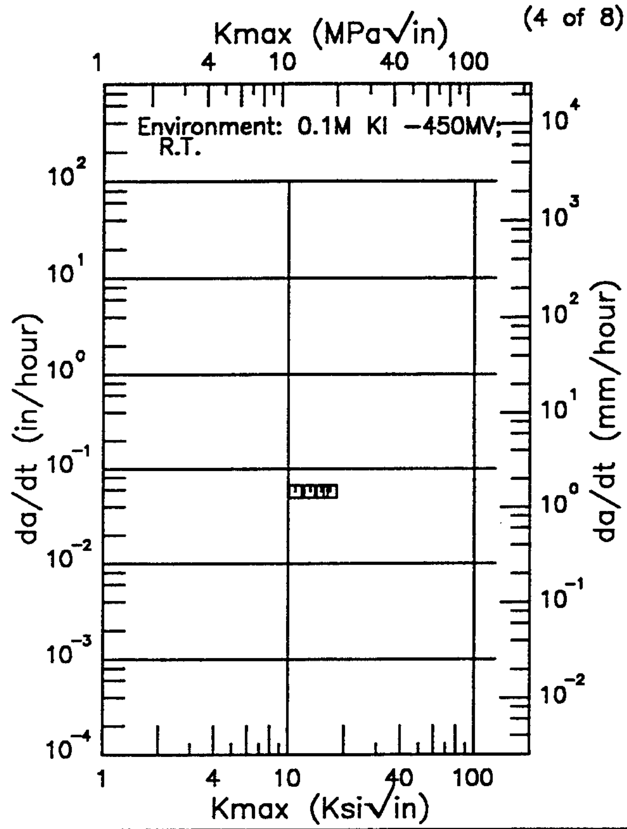
Condition/Ht: T651
Form: 1 in. Plate
Specimen Type: DCB
Orientation: T–L
Yield Strength:
Ult. Strength:

Specimen Thk:
Specimen Width:
A_0:
K_{Iscc}:
Ref: 85543



Kmax (Ksi√in)	da/dt (10^{-3}in/hour)

RMS % Error	



Kmax (Ksi√in)	da/dt (10^{-3}in/hour)

RMS % Error	

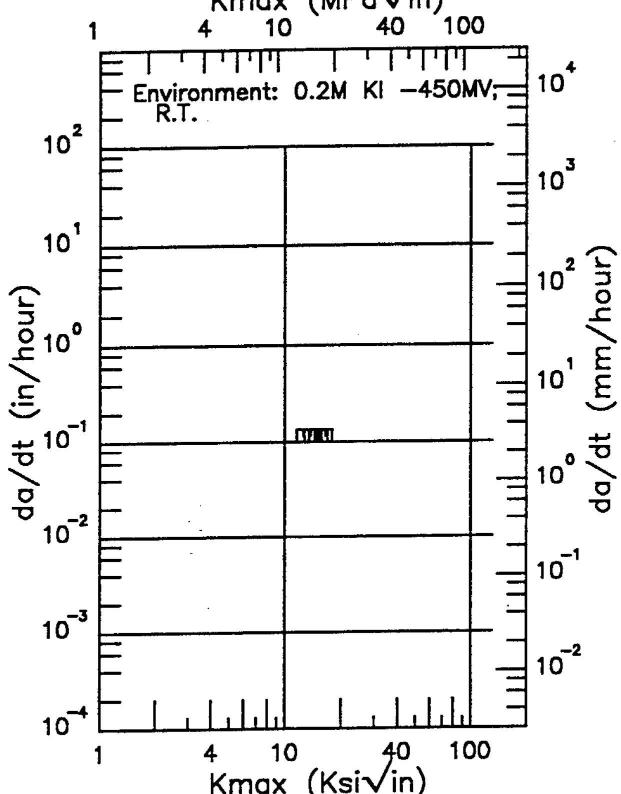
Figure 8.11.3.2.5 (Continued)

7079

Condition/Ht: T651
Form: 1 in. Plate
Specimen Type: DCB
Orientation: T–L
Yield Strength:
Ult. Strength:

Specimen Thk:
Specimen Width:
Ao:
KIscc:
Ref: 85543

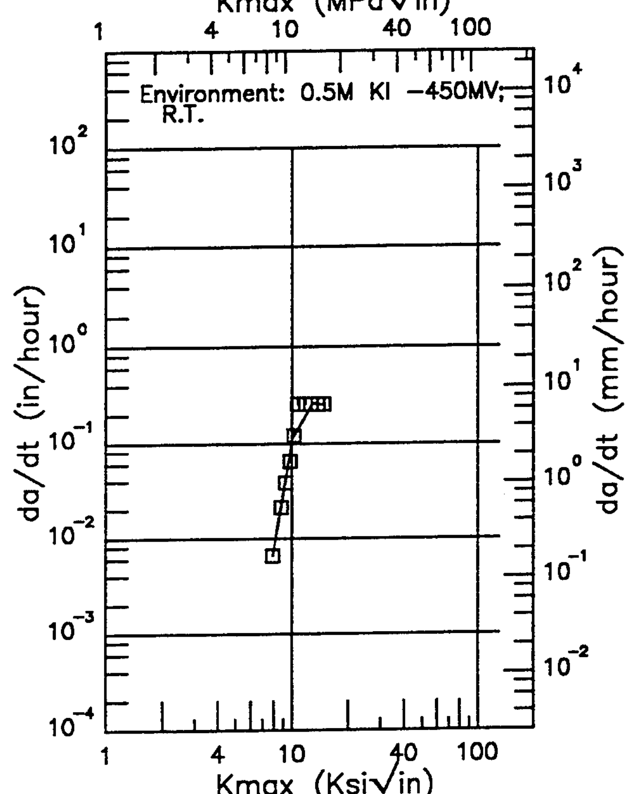
(5 of 8)



Kmax (Ksi√in)	da/dt (10^{-3}in/hour)

RMS % Error

(6 of 8)



Kmax (Ksi√in)	da/dt (10^{-3}in/hour)
7.90 (min)	6.74
8.	7.45
9.	29.6
10.	111.
13.	267.
14.80 (max)	256.

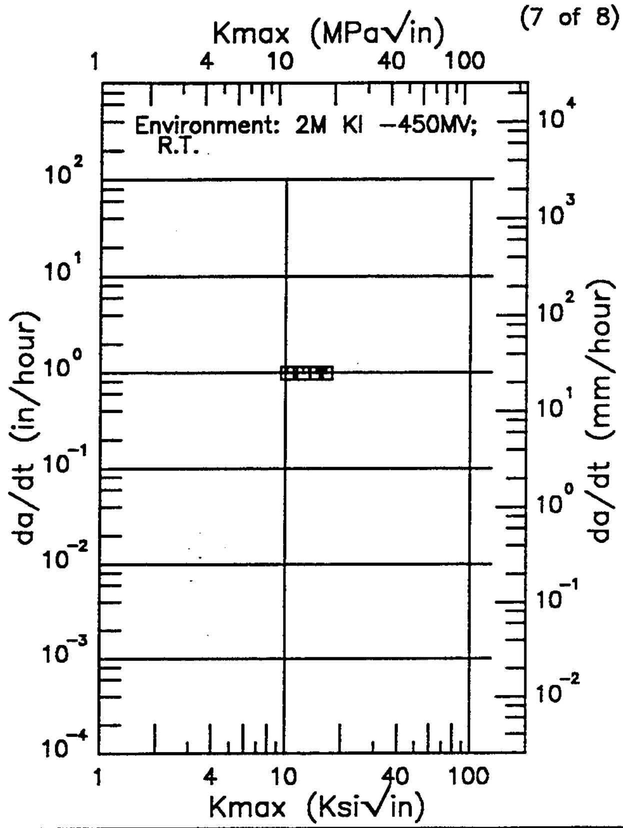
RMS % Error 30.14

Figure 8.11.3.2.5 (Continued)

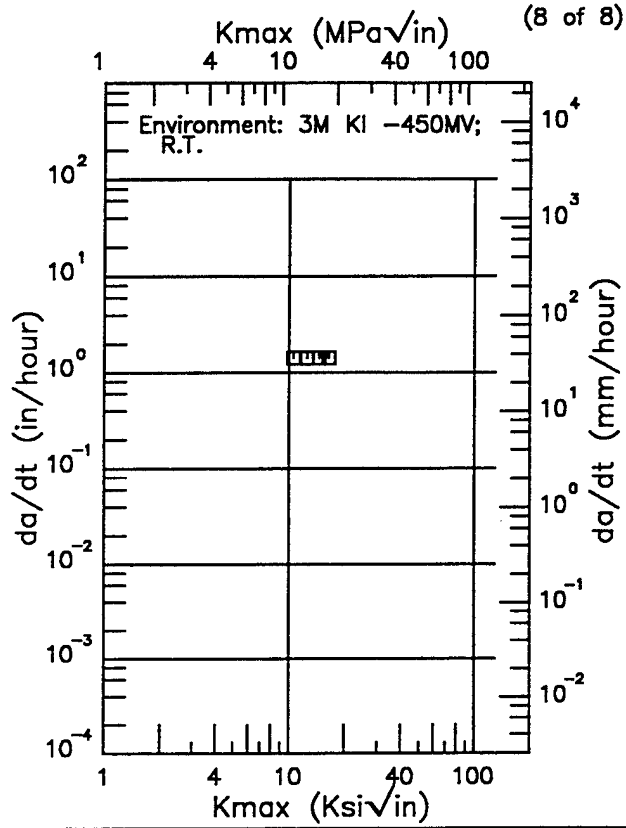
Condition/Ht: T651
Form: 1 in. Plate
Specimen Type: DCB
Orientation: T–L
Yield Strength:
Ult. Strength:

Specimen Thk:
Specimen Width:
A_0:
K_{Iscc}:
Ref: 85543

(7 of 8)



(8 of 8)



Kmax (Ksi√in)	da/dt (10^{-3}in/hour)

RMS % Error

Kmax (Ksi√in)	da/dt (10^{-3}in/hour)

RMS % Error

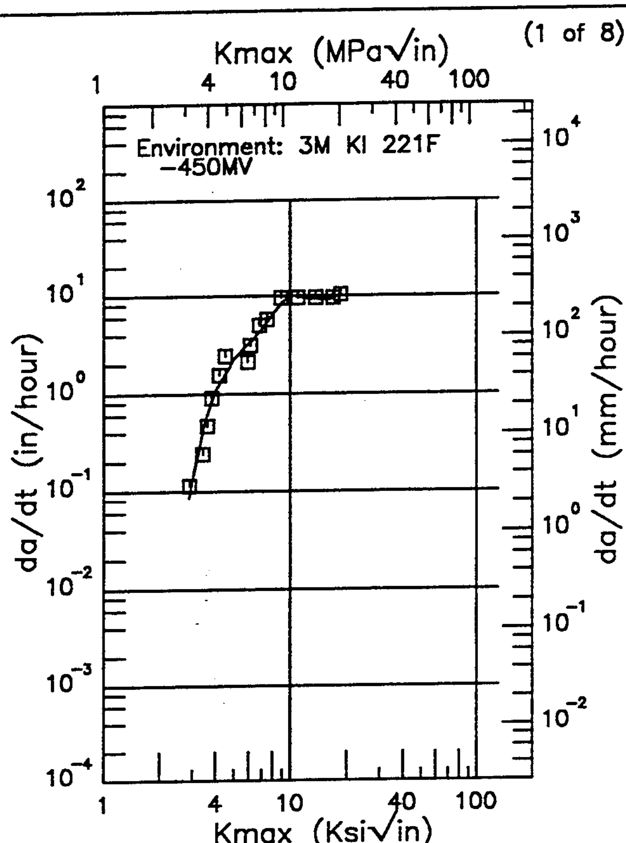
Figure 8.11.3.2.5 (Concluded)

7079

Condition/Ht: T651
Form: 1 in. Plate
Specimen Type: DCB
Orientation: T–L
Yield Strength:
Ult. Strength:

Specimen Thk:
Specimen Width:
Ao:
KIscc:
Ref: 85543

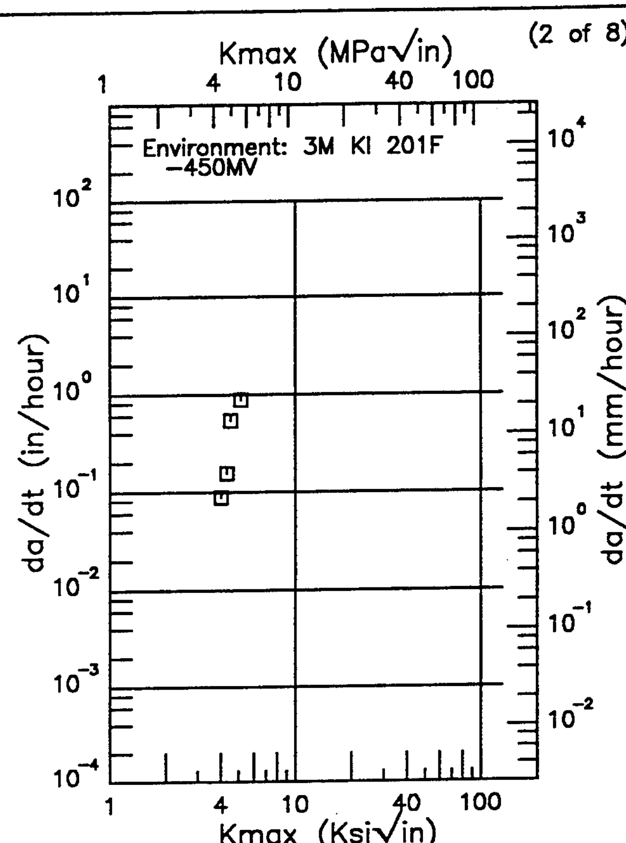
(1 of 8)



Kmax (Ksi√in)	da/dt (10^{-3}in/hour)
2.90 (min)	86.2
3.	125.
4.	485.
4.	1060.
5.	2264.
6.	3275.
7.	4529.
8.	6407.
9.	8513.
10.	10122.
13.	9290.
16.	9156.
18.50 (max)	10087.

RMS % Error
22.9

(2 of 8)



Kmax (Ksi√in)	da/dt (10^{-3}in/hour)

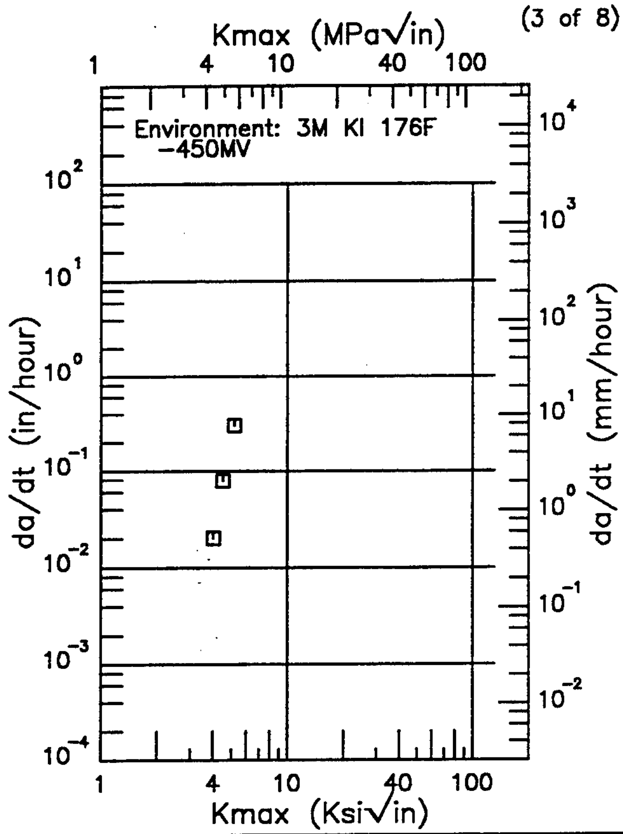
RMS % Error

Figure 8.11.3.2.6

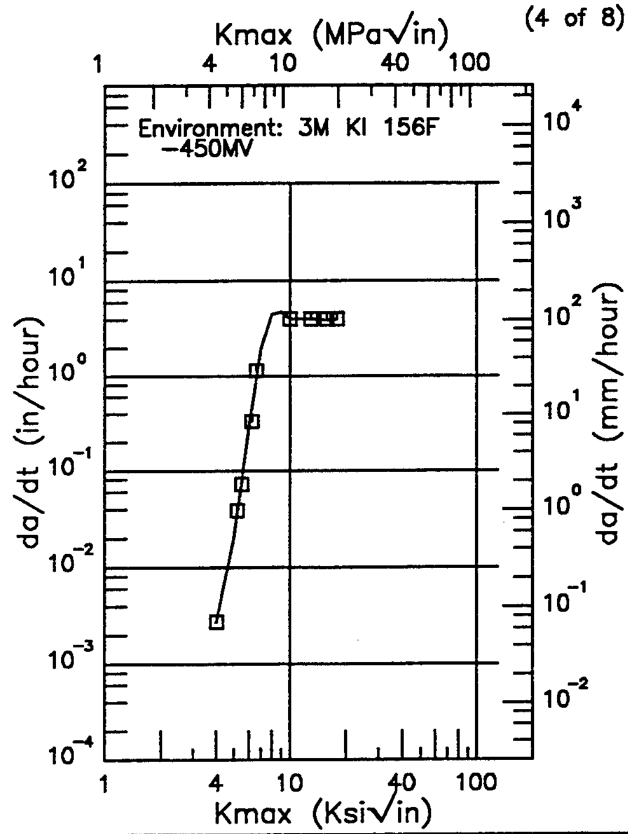
Condition/Ht: T651
Form: 1 in. Plate
Specimen Type: DCB
Orientation: T–L
Yield Strength:
Ult. Strength:

Specimen Thk:
Specimen Width:
A_o:
K_{Iscc}:
Ref: 85543

(3 of 8)



(4 of 8)



Kmax (Ksi√in)	da/dt (10^{-3}in/hour)

Kmax (Ksi√in)	da/dt (10^{-3}in/hour)
4.00 (min)	2.73
5.	20.0
6.	284.
7.	1974.
8.	4531.
9.	4812.
10.	4015.
13.	4033.
16.	3922.
17.90 (max)	4000.

RMS % Error	

RMS % Error	
11.38	

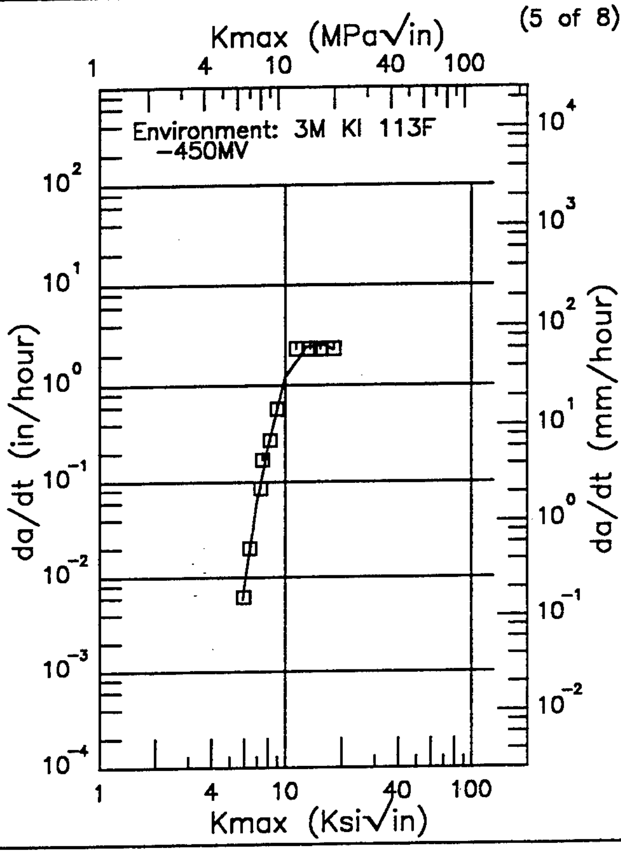
Figure 8.11.3.2.6 (Continued)

7079

Condition/Ht: T651
Form: 1 in. Plate
Specimen Type: DCB
Orientation: T−L
Yield Strength:
Ult. Strength:

Specimen Thk:
Specimen Width:
Ao:
KIscc:
Ref: 85543

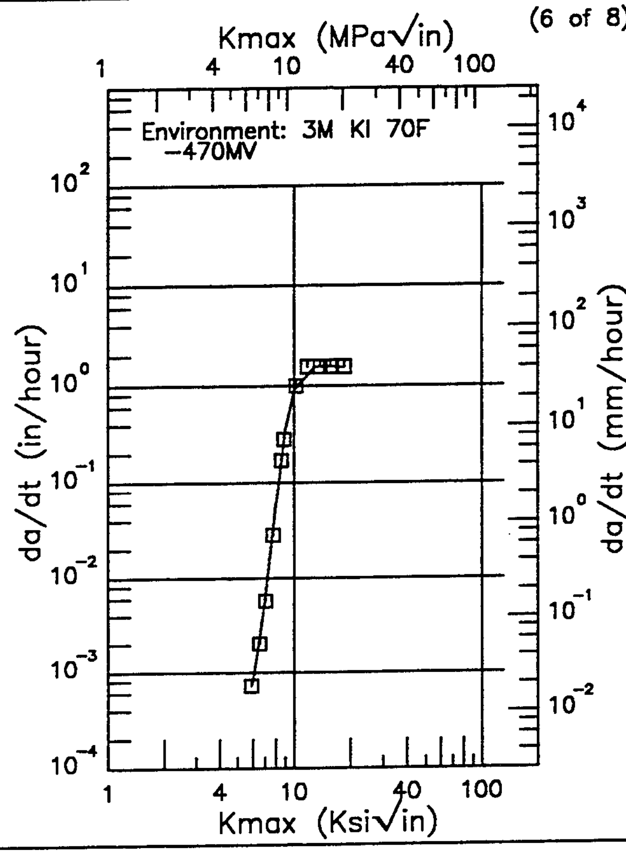
(5 of 8)



Kmax (Ksi√in)	da/dt (10^{-3}in/hour)
5.90 (min)	5.87
6.	7.77
7.	62.7
8.	227.
9.	577.
10.	1220.
13.	2425.
16.	2553.
18.00 (max)	2300.

RMS % Error
17.26

(6 of 8)



Kmax (Ksi√in)	da/dt (10^{-3}in/hour)
5.90 (min)	0.735
6.	0.820
7.	5.76
8.	59.3
9.	355.
10.	918.
13.	1569.
16.	1561.
18.50 (max)	1550.

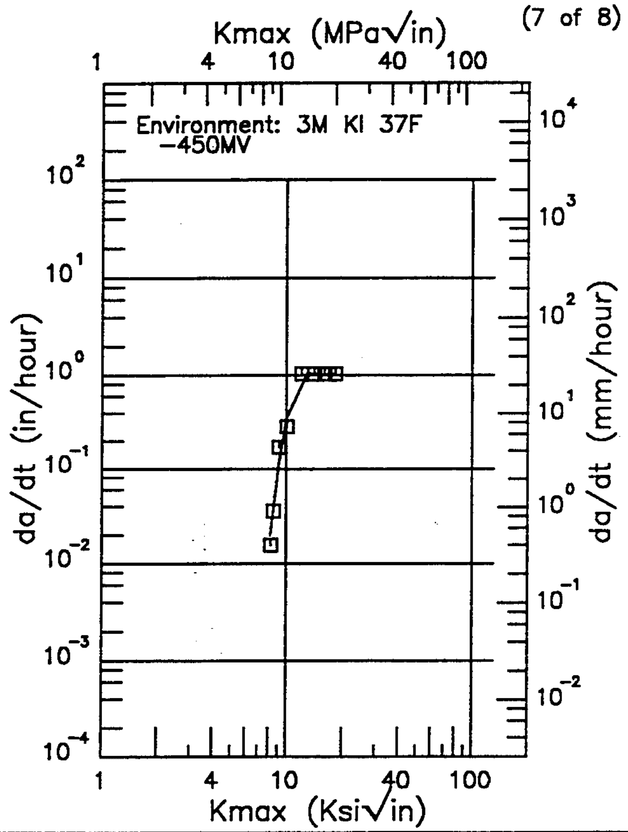
RMS % Error
9.3

Figure 8.11.3.2.6 (Continued)

Condition/Ht: T651
Form: 1 in. Plate
Specimen Type: DCB
Orientation: T–L
Yield Strength:
Ult. Strength:

Specimen Thk:
Specimen Width:
A_o:
K_{Iscc}:
Ref: 85543

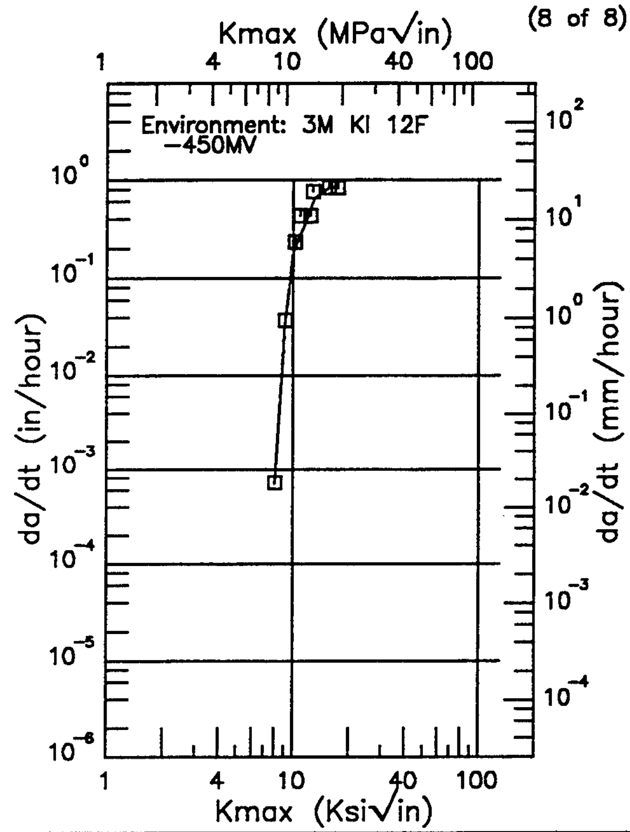
(7 of 8)



Kmax (Ksi√in)	da/dt (10^{-3}in/hour)
8.20 (min)	19.7
9.	100.
10.	346.
13.	1059.
16.	998.
18.20 (max)	1027.

RMS % Error	
23.64	

(8 of 8)



Kmax (Ksi√in)	da/dt (10^{-3}in/hour)
8.00 (min)	0.705
9.	29.3
10.	183.
13.	641.
16.	859.
17.30 (max)	819.

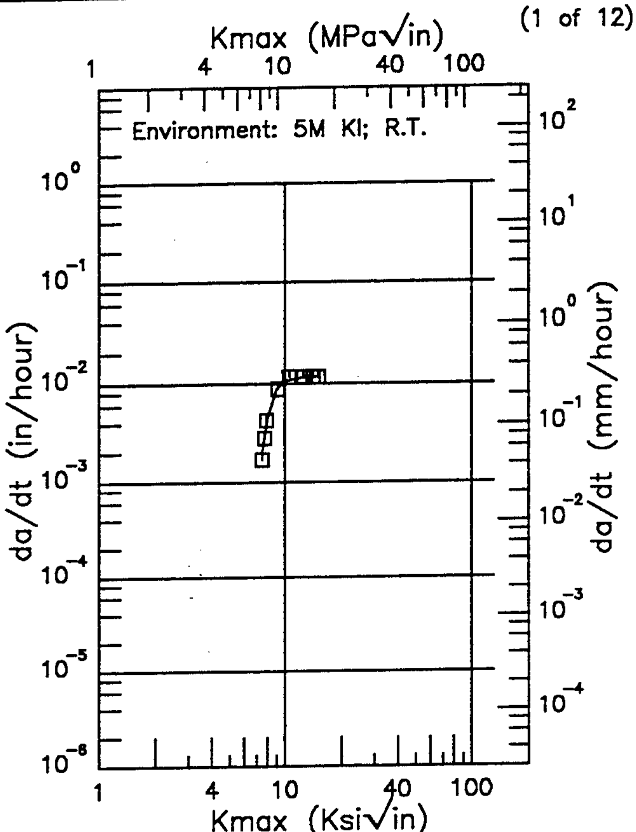
RMS % Error	
23.03	

Figure 8.11.3.2.6 (Concluded)

7079

Condition/Ht: T651	Specimen Thk:
Form: 1 in. Plate	Specimen Width:
Specimen Type: DCB	A_0:
Orientation: T–L	K_{Iscc}:
Yield Strength:	Ref: 85543
Ult. Strength:	

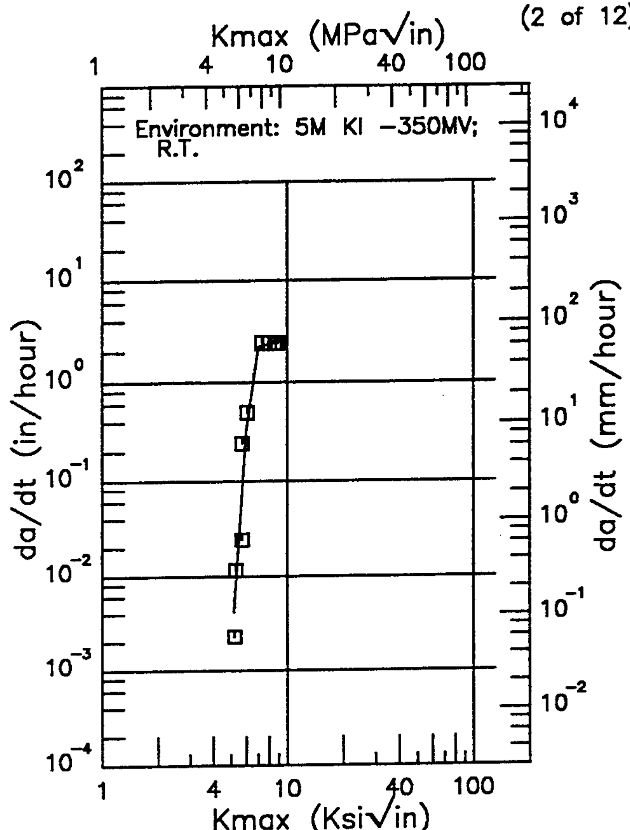
(1 of 12)



Kmax (Ksi√in)	da/dt (10^{-3}in/hour)
7.50 (min)	2.06
8.	4.44
9.	8.89
10.	10.7
13.	11.6
15.00 (max)	11.6

RMS % Error 7.75

(2 of 12)



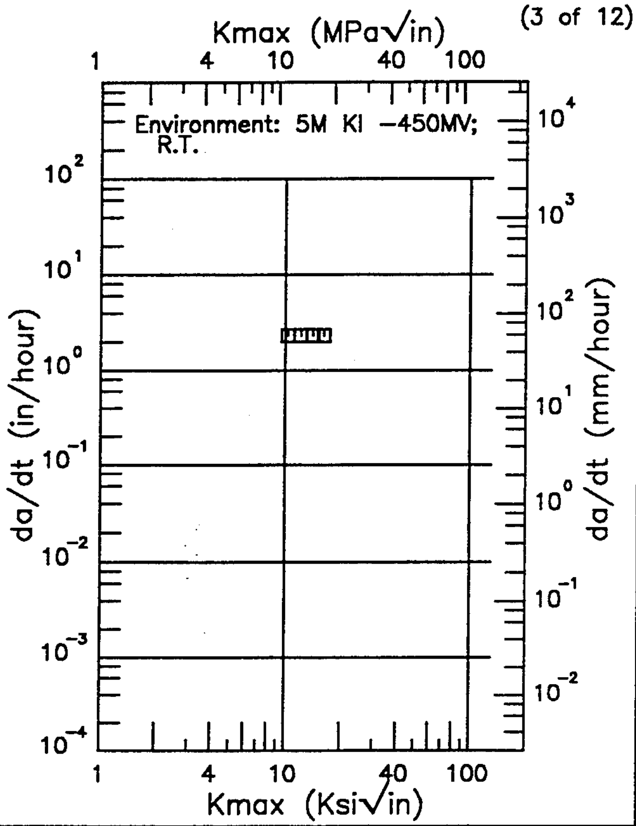
Kmax (Ksi√in)	da/dt (10^{-3}in/hour)
5.20 (min)	4.19
6.	322.
7.	2214.
8.	2365.
8.90 (max)	2554.

RMS % Error 90.84

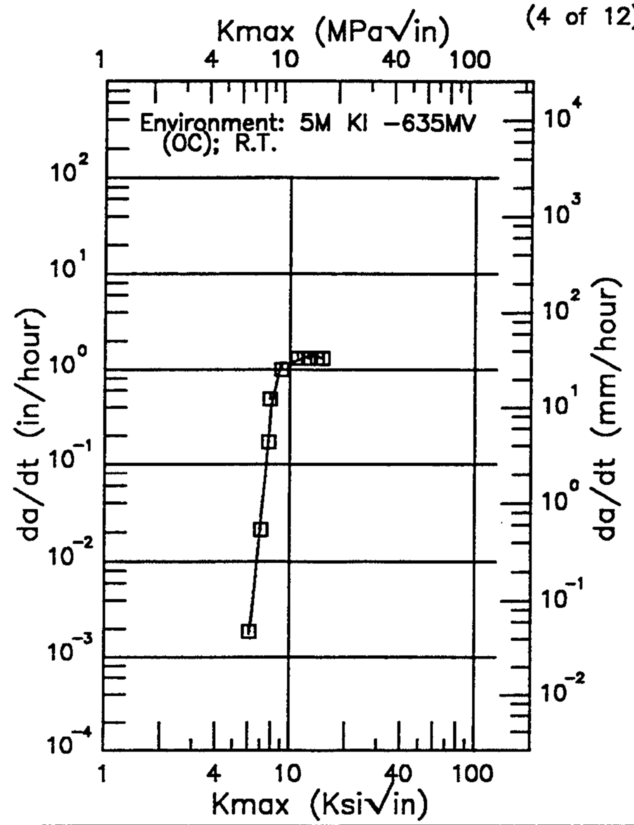
Figure 8.11.3.2.7

Condition/Ht: T651	
Form: 1 in. Plate	Specimen Thk:
Specimen Type: DCB	Specimen Width:
Orientation: T–L	A_o:
Yield Strength:	K_{Iscc}:
Ult. Strength:	Ref: 85543

(3 of 12)



(4 of 12)



Kmax (Ksi√in)	da/dt (10^{-3}in/hour)

RMS % Error

Kmax (Ksi√in)	da/dt (10^{-3}in/hour)
6.10 (min)	1.77
7.	24.9
8.	411.
9.	1189.
10.	1160.
13.	1420.
15.00 (max)	1330.

RMS % Error 34.08

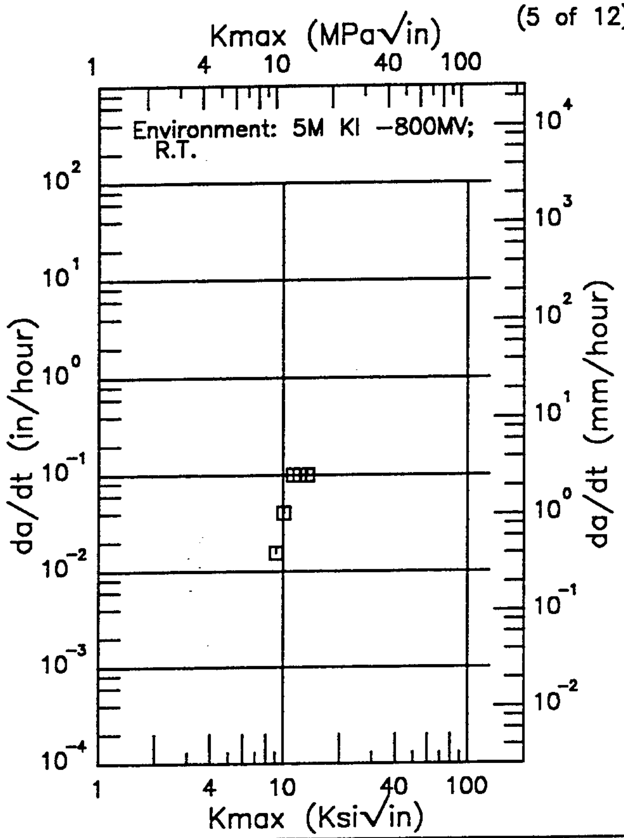
Figure 8.11.3.2.7 (Continued)

7079

Condition/Ht: T651
Form: 1 in. Plate
Specimen Type: DCB
Orientation: T–L
Yield Strength:
Ult. Strength:

Specimen Thk:
Specimen Width:
Ao:
KIscc:
Ref: 85543

(5 of 12)



Kmax (Ksi√in)	da/dt (10^{-3}in/hour)

RMS % Error	

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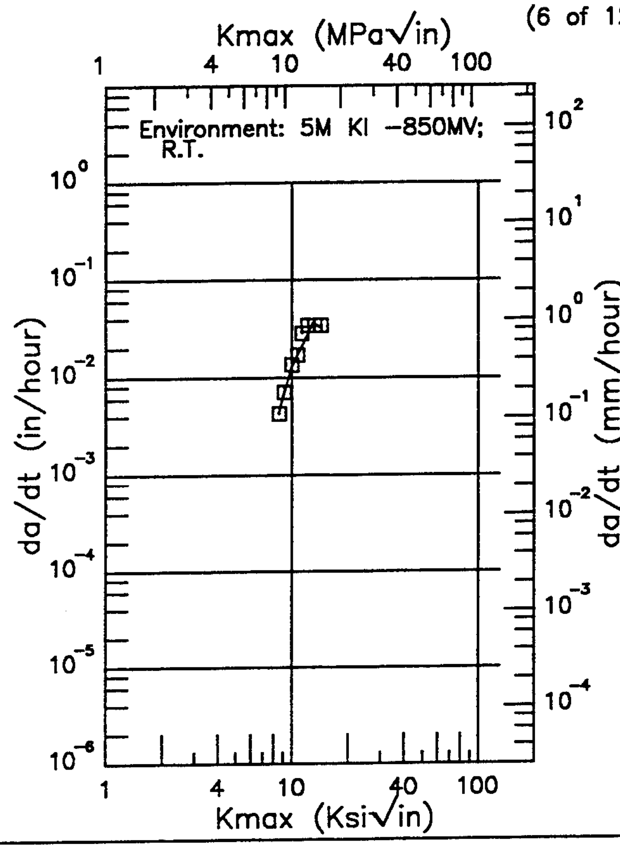


Kmax (Ksi√in)	da/dt (10^{-3}in/hour)
8.50 (min)	4.30
9.	6.48
10.	13.2
13.	36.1
14.30 (max)	32.6

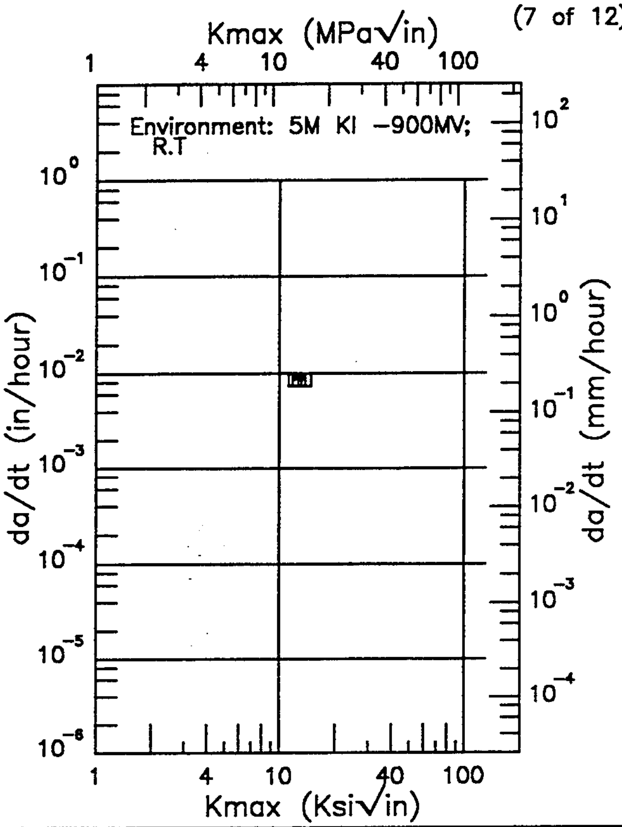
RMS % Error	
14.47	

Figure 8.11.3.2.7 (Continued)

Condition/Ht: T651
Form: 1 in. Plate
Specimen Type: DCB
Orientation: T–L
Yield Strength:
Ult. Strength:

Specimen Thk:
Specimen Width:
A_o:
K_{Iscc}:
Ref: 85543

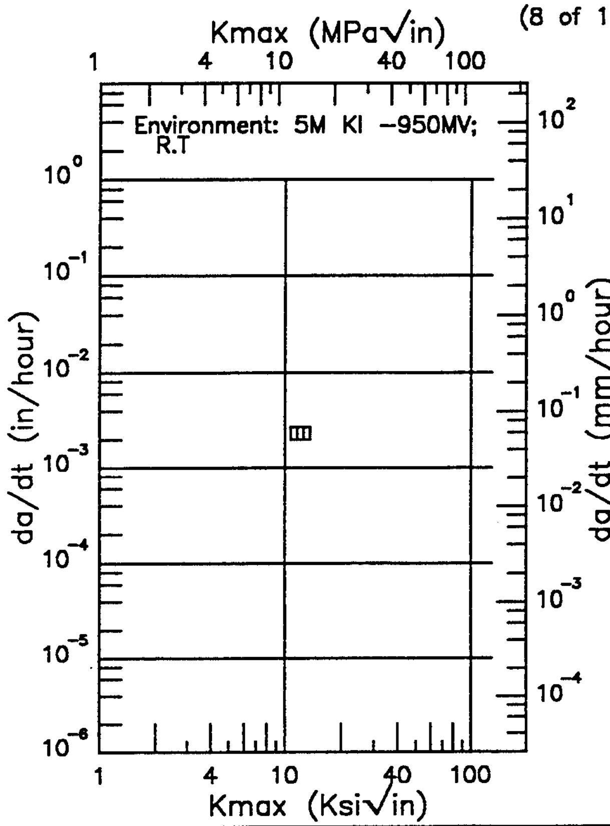
(7 of 12)



Kmax (Ksi√in)	da/dt (10^{-3}in/hour)

RMS % Error	

(8 of 12)



Kmax (Ksi√in)	da/dt (10^{-3}in/hour)

RMS % Error	

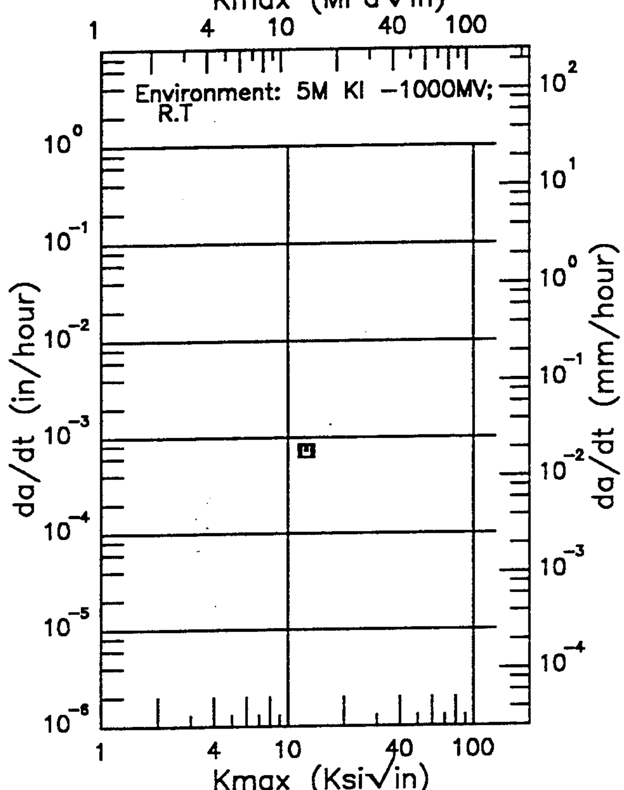
Figure 8.11.3.2.7 (Continued)

7079

Condition/Ht: T651
Form: 1 in. Plate
Specimen Type: DCB
Orientation: T–L
Yield Strength:
Ult. Strength:

Specimen Thk:
Specimen Width:
Ao:
KIscc:
Ref: 85543

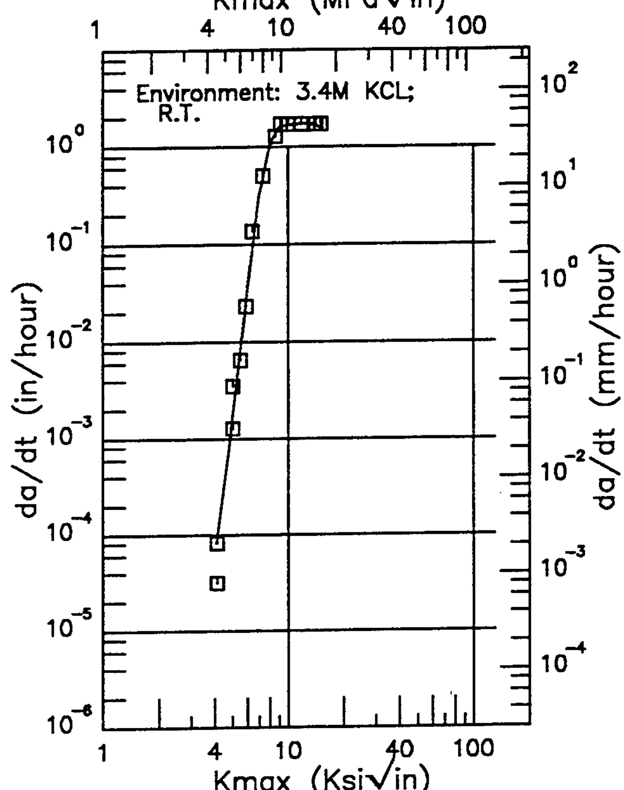
(9 of 12)



Kmax (Ksi√in)	da/dt (10^{-3}in/hour)

RMS % Error	

(10 of 12)



Kmax (Ksi√in)	da/dt (10^{-3}in/hour)
4.10 (min)	0.0813
5.	1.63
6.	35.8
7.	327.
8.	1082.
9.	1614.
10.	1688.
13.	1775.
15.00 (max)	1586.

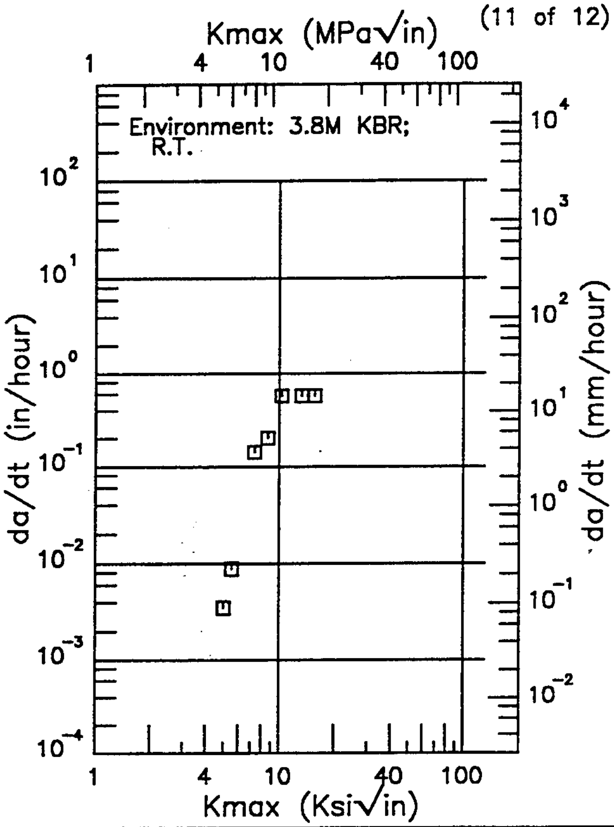
RMS % Error	
38.53	

Figure 8.11.3.2.7 (Continued)

Condition/Ht: T651
Form: 1 in. Plate
Specimen Type: DCB
Orientation: T-L
Yield Strength:
Ult. Strength:

Specimen Thk:
Specimen Width:
A_0:
K_{Iscc}:
Ref: 85543

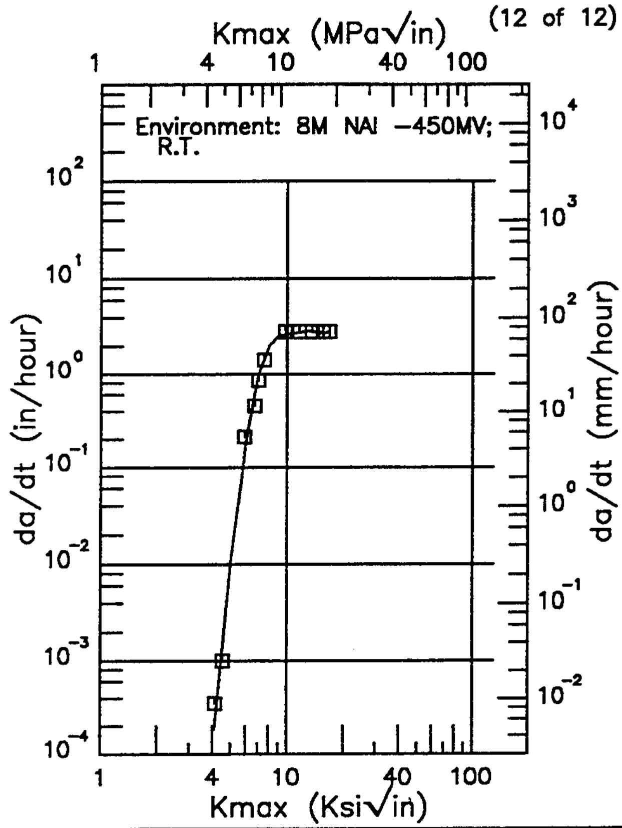
(11 of 12)



Kmax (Ksi√in)	da/dt (10^{-3}in/hour)

RMS % Error

(12 of 12)



Kmax (Ksi√in)	da/dt (10^{-3}in/hour)
4.10 (min)	0.185
5.	10.4
6.	186.
7.	960.
8.	2009.
9.	2556.
10.	2686.
13.	2869.
16.	2766.
16.70 (max)	2832.

RMS % Error
32.19

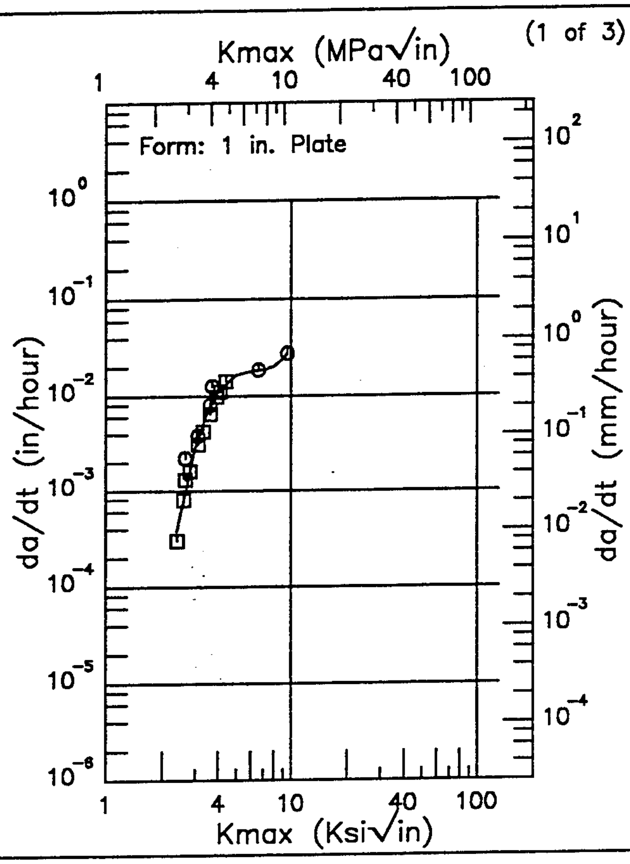
Figure 8.11.3.2.7 (Concluded)

7079

Condition/Ht: T651
Environment: 3.5% NACL
Specimen Type: DCB
Orientation: S-L
Yield Strength:
Ult. Strength:

Specimen Thk: 1 in.
Specimen Width: 3.5 – 5 in.
Ao:
KIscc:
Ref: 84284;78313

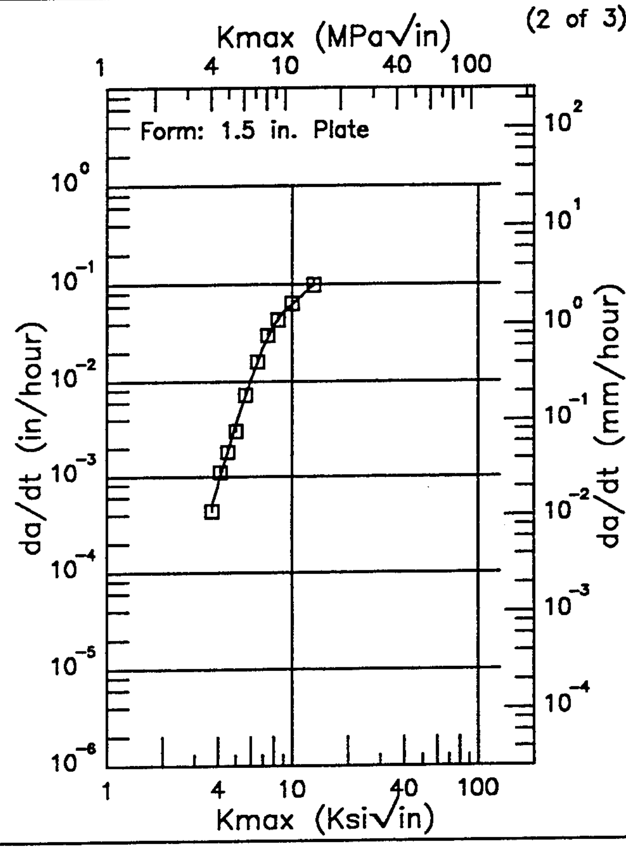
(1 of 3)



Kmax (Ksi√in)	da/dt (10^{-3}in/hour)
2.40 (min)	0.371
3.	0.579
3.	2.79
4.	6.71
4.	11.0
5.	16.5
6.	18.2
7.	18.8
8.	20.3
9.	24.2
9.50 (max)	27.5

RMS % Error
37.03

(2 of 3)



Kmax (Ksi√in)	da/dt (10^{-3}in/hour)
3.70 (min)	0.491
4.	0.813
5.	3.47
6.	10.4
7.	22.7
8.	38.2
9.	52.2
10.	62.8
13.00 (max)	98.0

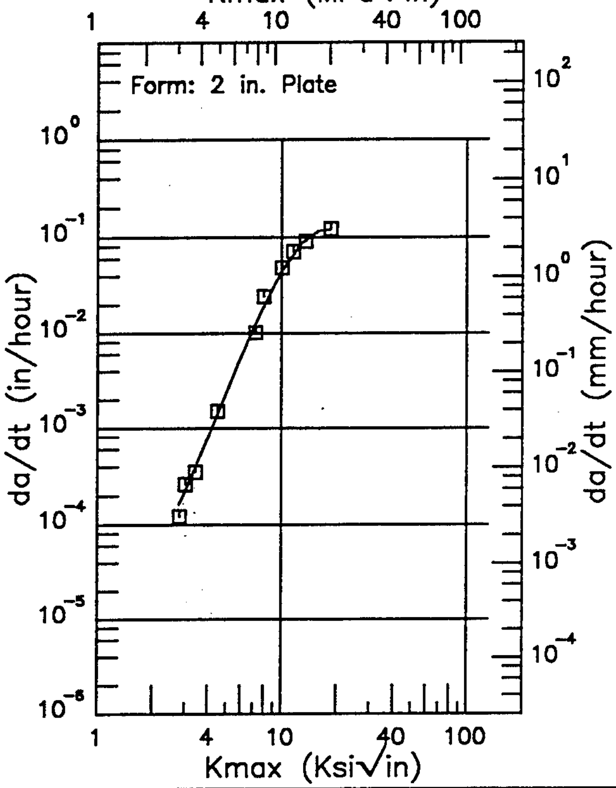
RMS % Error
8.08

Figure 8.11.3.2.8

Condition/Ht: T651
Environment: 3.5% NACL
Specimen Type: DCB
Orientation: S–L
Yield Strength:
Ult. Strength:

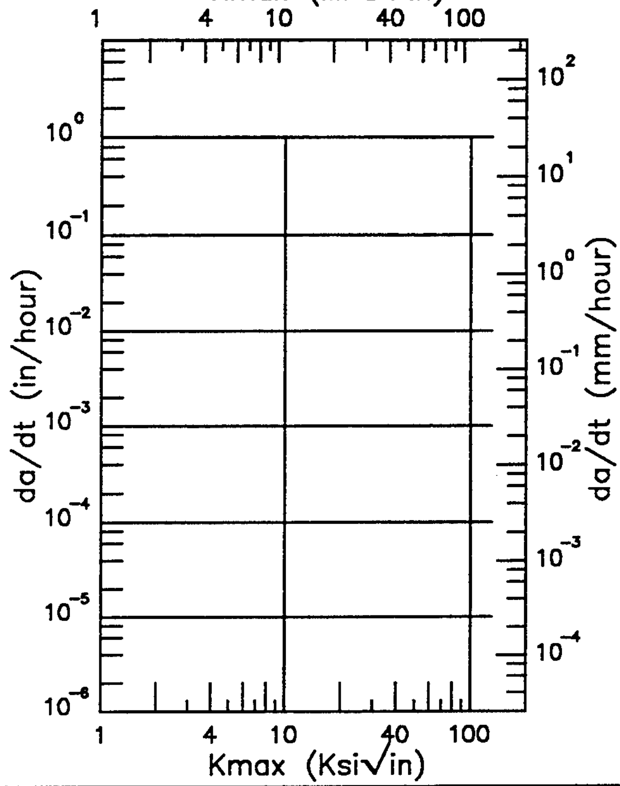
Specimen Thk: 1 in.
Specimen Width: 3.5 – 5 in.
A_o:
K_{Iscc}:
Ref: 84284;78313

(3 of 3)



Kmax (Ksi√in)	da/dt (10^{-3}in/hour)
2.80 (min)	0.164
3.	0.218
4.	0.430
4.	0.799
5.	2.32
6.	5.51
7.	11.1
8.	19.4
9.	30.6
10.	44.0
13.	88.1
16.	117.
18.50 (max)	120.

RMS % Error
15.26



Kmax (Ksi√in)	da/dt (10^{-3}in/hour)

RMS % Error

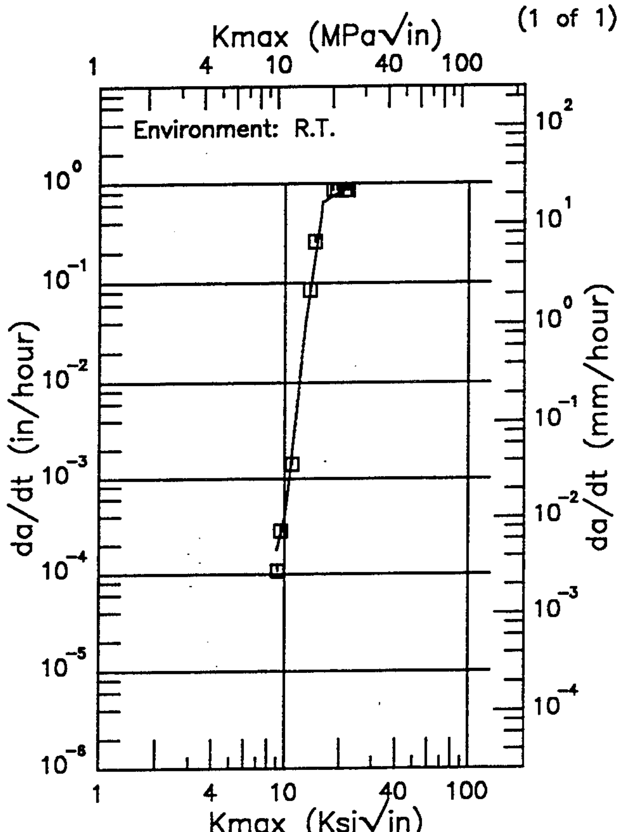
Figure 8.11.3.2.8 (Concluded)

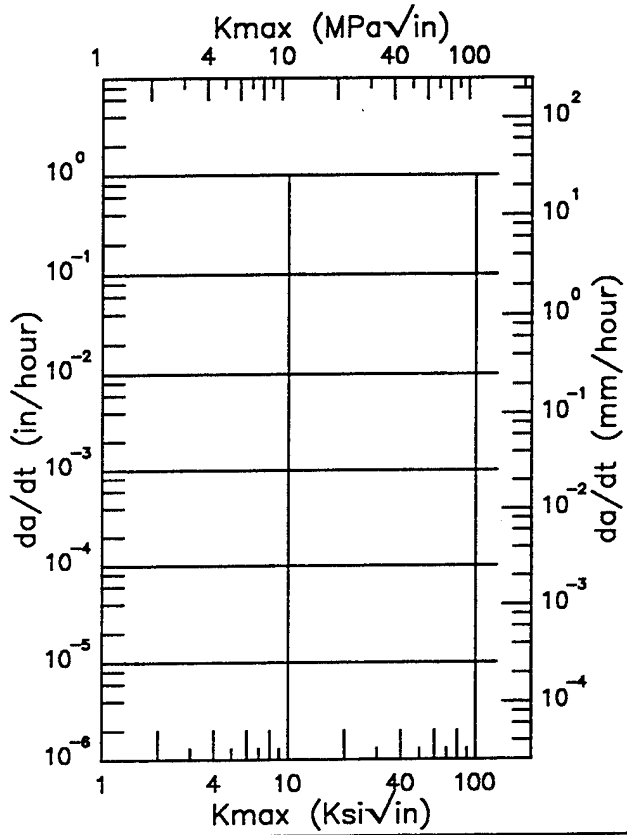
7079

Condition/Ht: T651+ 50HR AT 320F
Form: 1 in. Plate
Specimen Type: DCB
Orientation: T–L
Yield Strength:
Ult. Strength:

Specimen Thk:
Specimen Width:
A_o:
K_{Iscc}:
Ref: 85543

(1 of 1)





Kmax (Ksi√in)	da/dt (10^{-3}in/hour)
9.10 (min)	0.177
10.	0.398
13.	39.7
16.	647.
20.	815.
22.00 (max)	902.

Kmax (Ksi√in)	da/dt (10^{-3}in/hour)

RMS % Error 23.91

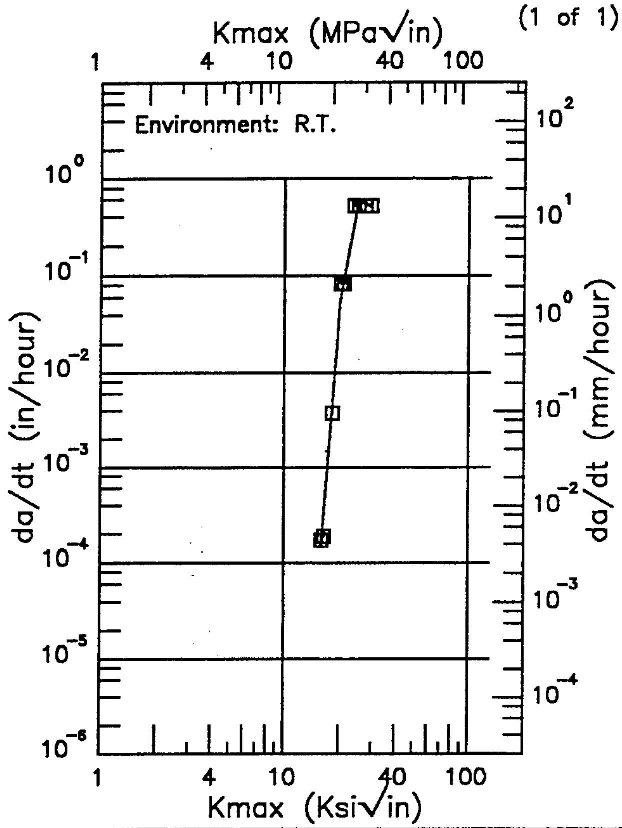
RMS % Error

Figure 8.11.3.2.9

Condition/Ht: T651+500HR AT 320F
Form: 1 in. Plate
Specimen Type: DCB
Orientation: T–L
Yield Strength:
Ult. Strength:

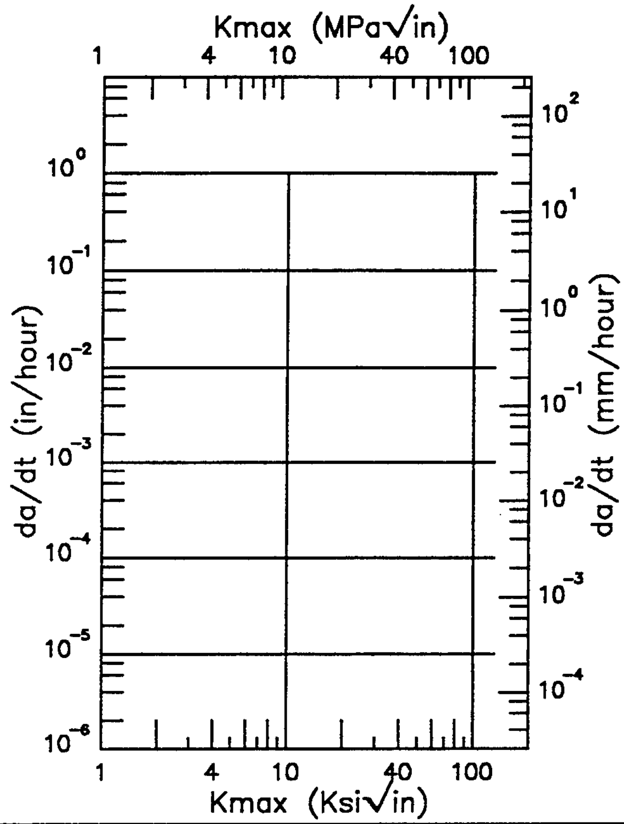
Specimen Thk:
Specimen Width:
A_0:
K_{Iscc}:
Ref: 85543

(1 of 1)



Kmax (Ksi√in)	da/dt (10^{-3}in/hour)
15.90 (min)	0.149
16.	0.152
20.	52.8
25.	600.
29.30 (max)	514.

RMS % Error 26.67



Kmax (Ksi√in)	da/dt (10^{-3}in/hour)

RMS % Error

Figure 8.11.3.2.10

TABLE 8.11.3.3

K_{Iscc} SUMMARY FOR ALUMINUM ALLOY 7079

Condition/ Heat Treat	Prod Form	Test Temp (°F)	Spec Or.	Yield Str (Ksi)	Envir.	Specimen			Prod Thk (in)	Crack (in)	K_Q (Ksi√in)	K_{Iscc} (Ksi√in)	Test Time (min)	Test Date	Refer
						Design	Width (in)	Thick (in)							
T6	P	R.T.	S-L	---	3.5% NaCl	DCB	4	1	1	---	16.2	7.8	---	1967	84329
						DCB	3.5	1	1	---	---	4.3	---	1968	84330
						DCB	4	1	1	---	15.6	7.2	---	1967	84329
					Dist Water	DCB	4	1	1	---	---	9.2	---	1967	84329
				76	3.5% NaCl	DCB	4	1	1	---	16	7	---	1968	84331
T651	P	R.T.	S-L	64	3.5% NaCl	DCB	5	1	1	0.7	30	3	---	1969	78313
				66.6	Industrial Atm	CT	2	1	2.5	---	19.2	9	---	1973	86688
					Salt-Dichromate-Acetate	CT	2	1	2.5	---	19.2	6	---	1973	86688
					Seacoast Atm	CT	2	1	2.5	---	19.2	9	---	1973	86688

TABLE 8.12.2.2

ALUMINUM 7079 (ALCLAD) K_C

CONDITION HEAT TREAT	PRODUCT		TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN		CRACK LENGTH		GROSS STRESS		K_{app}			K_C			DATE	REFER
	FORM	THICK (in.)				WIDTH (in.) W	THICK (in.) B	INIT (in.) $2a_o$	FINAL (in.) $2a_f$	ONSET (Ksi) σ_o	MAX (Ksi) σ_{Max}	K_{app} (Ksi√in)	K_{app} MEAN	STAN DEV	K_c (Ksi√in)	K_c MEAN	STAN DEV		
BUCKLING OF CRACK EDGES NOT RESTRAINED																			
T6	Sheet	0.06	R.T.	L-T	61.2	2.000	0.062	0.625	1.200	---	39.10	41.21*	---	---	70.02*	---	---	1973	86213
		0.06			61.2	2.000	0.062	0.625	1.180	---	39.60	41.74*			69.58*			1973	86213
		0.06			61.2	2.000	0.062	0.625	1.280	---	38.20	40.26*			74.00*			1973	86213
T6	Sheet	0.06	R.T.	L-T	71.2	2.000	0.069	0.614	1.040	---	41.80	43.61*	---	---	64.57*	---	---	1973	86213
		0.06			71.2	2.000	0.069	0.612	1.020	---	42.60	44.36*			64.64*			1973	86213
		0.06			71.2	2.000	0.069	0.613	1.090	---	41.60	43.32*			67.24*			1973	86213
		0.06			71.2	2.000	0.069	0.616	1.100	---	42.20	44.12*			68.83*			1973	86213
T6	Sheet	0.11	R.T.	L-T	73.1	3.000	0.109	1.150	2.024	---	38.00	56.26*	---	---	96.89*	---	---	1973	86213
		0.11			73.1	3.000	0.109	1.180	2.085	---	37.40	56.40*			99.61*			1973	86213
T6	Sheet	0.06	84	L-T	69.9	3.000	0.058	1.230	2.353	---	34.50	53.63*	---	---	114.95*	---	---	1973	86213
		0.06			69.9	3.000	0.058	1.200	2.088	---	34.40	52.51*			91.90*			1973	86213
T6	Sheet	0.09	84	L-T	72.1	3.000	0.087	1.230	2.264	---	36.30	56.42*	---	---	111.65*	---	---	1973	86213
		0.09			72.1	3.000	0.088	1.190	2.281	---	37.60	57.05*			117.28*			1973	86213
T6	Sheet	0.06	R.T.	T-L	58.7	2.000	0.062	0.625	1.080	---	37.00	39.00*	---	---	59.26*	---	---	1973	86213
		0.06			58.7	2.000	0.062	0.625	1.150	---	36.40	38.37*			62.18*			1973	86213
		0.06			58.7	2.000	0.062	0.625	1.120	---	36.50	38.47*			60.64*			1973	86213

* NOTE: NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STANDARD DEVIATION.

TABLE 8.12.2.2 (CONTINUED)

ALUMINUM 7079 (ALCLAD) K_C																			
CONDITION HEAT TREAT	PRODUCT		TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN		CRACK LENGTH		GROSS STRESS		K_{app}			K_C			DATE	REFER
	FORM	THICK (in.)				WIDTH (in.) W	THICK (in.) B	INIT (in.) $2a_o$	FINAL (in.) $2a_f$	ONSET (Ksi) σ_o	MAX (Ksi) σ_{Max}	K_{app} (Ksi$\sqrt{in}$)	K_{app} MEAN	STAN DEV	K_C (Ksi$\sqrt{in}$)	K_C MEAN	STAN DEV		
BUCKLING OF CRACK EDGES NOT RESTRAINED																			
T6	Sheet	0.06	R.T.	T-L	68.7	2.000	0.069	0.616	0.975	---	39.70	41.51*	---	---	57.82*	---	---	1973	86213
		0.06			68.7	2.000	0.069	0.617	0.930	---	39.80	41.61*			55.74*			1973	86213
		0.06			68.7	2.000	0.069	0.614	0.990	---	39.60	41.32*			58.50*			1973	86213
		0.06			68.7	2.000	0.069	0.618	0.910	---	39.80	41.70*			54.75*			1973	86213
T6	Sheet	0.04	R.T.	T-L	63.2	3.000	0.037	1.163	1.954	---	33.70	50.26*	---	---	81.82*	---	---	1973	86213
		0.04			63.2	3.000	0.037	1.142	2.184	---	32.30	47.59*			92.94*			1973	86213
		0.04			63.2	3.000	0.037	1.125	1.883	---	34.00	49.54*			78.65*			1973	86213
T6	Sheet	0.05	R.T.	T-L	67.0	3.000	0.050	1.152	2.087	---	34.40	50.99*	---	---	91.76*	---	---	1973	86213
		0.05			67.0	3.000	0.050	1.155	2.084	---	34.70	51.50*			92.42*			1973	86213
		0.05			67.0	3.000	0.050	1.153	2.091	---	34.60	51.29*			92.57*			1973	86213
T6	Sheet	0.11	R.T.	T-L	69.5	3.000	0.109	1.590	2.421	---	25.70	49.51	50.2	1.0	91.63*	---	---	1973	86213
		0.11			69.5	3.000	0.110	1.280	2.066	---	31.80	50.94			83.58*			1973	86213
T6	Sheet	0.05	84	T-L	64.3	3.000	0.049	1.190	2.305	---	32.70	49.61*	---	---	104.20*	---	---	1973	86213
		0.05			64.3	3.000	0.049	1.030	2.156	---	35.00	48.06*			98.49*			1973	86213
T6	Sheet	0.06	84	T-L	68.2	3.000	0.058	1.130	1.952	---	33.00	48.26	48.5	0.3	80.01*	---	---	1973	86213
		0.06			68.2	3.000	0.058	1.200	2.126	---	31.90	48.69			87.70*			1973	86213
		0.06			67.2	3.000	0.062	1.160	2.267	---	35.80	53.33*			110.31*			1973	86213
		0.06			67.2	3.000	0.062	1.230	2.273	---	34.90	54.25*			108.10*			1973	86213

* NOTE: NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STANDARD DEVIATION.

TABLE 8.12.2.2 (CONCLUDED)

ALUMINUM 7079 (ALCLAD) K_C

CONDITION HEAT TREAT	PRODUCT FORM	PRODUCT THICK (in.)	TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN WIDTH (in.) W	SPECIMEN THICK (in.) B	CRACK LENGTH INIT (in.) $2a_o$	CRACK LENGTH FINAL (in.) $2a_f$	GROSS STRESS ONSET (Ksi) σ_o	GROSS STRESS MAX (Ksi) σ_{Max}	K_{app} (Ksi$\sqrt{in}$)	K_{app} MEAN	K_{app} STAN DEV	K_c (Ksi$\sqrt{in}$)	K_c MEAN	K_c STAN DEV	DATE	REFER
BUCKLING OF CRACK EDGES NOT RESTRAINED																			
T6	Sheet	0.09	84	T-L	66.1	3.000	0.087	1.230	2.347	---	32.70	50.83*	48.2	0.8	108.33*	---	---	1973	86213
		0.09			66.1	3.000	0.087	1.250	2.124	---	32.30	50.81*			88.67*			1973	86213
		0.09			68.3	3.000	0.088	1.170	2.096	---	31.80	47.66			85.46*			1973	86213
		0.09			69.3	3.000	0.088	1.220	2.086	---	33.10	51.14*			88.29*			1973	86213
		0.09			68.3	3.000	0.089	1.230	2.129	---	31.40	48.81			86.46*			1973	86213
		0.09			69.3	3.000	0.089	1.200	2.166	---	33.80	51.59*			95.87*			1973	86213
T6	Sheet	0.19	84	T-L	66.4	3.000	0.194	1.160	2.162	---	32.60	48.56	48.4	0.3	92.17*	---	---	1973	86213
		0.19			66.4	3.000	0.194	1.177	2.192	---	32.00	48.14			92.67*			1973	86213

* NOTE: NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STANDARD DEVIATION.

TABLE 8.13.2.1

ALUMINUM 7080 K_{Ic}

CONDITION	PRODUCT		TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN			CRACK LENGTH (in.) A	2.5 * $(K_{Ic}/TYS)^2$ (in.)	K_{Ic}			DATE	REFER
	FORM	THICK (in.)				WIDTH (in.) W	THICK (in.) B	DESIGN			K_{Ic} (Ksi * $\sqrt{in.}$)	K_{Ic} MEAN	STAN DEV		
T7	Forging	---	R.T.	C-L	62.2	1.500	0.750	CT	0.750	0.21	18.10	18.7	0.8	1972	82879
		---			62.2	1.500	0.750	CT	0.750	0.24	19.20			1972	82879
T7	Forged Bar	4.50	82	T-L	51.0	1.500	0.748	CT	0.715	0.44	21.40	21.9	0.7	1973	86213
		4.50			51.0	1.500	0.749	CT	0.758	0.48	22.40			1973	86213
T7	Forged Bar	4.50	86	T-L	51.0	1.500	0.753	CT	0.822	0.51	23.10	23.2	0.1	1973	86213
		4.50			51.0	1.500	0.752	CT	0.754	0.52	23.20			1973	86213

TABLE 8.14.1.1

MEAN PLANE STRAIN FRACTURE TOUGHNESS FOR ALUMINUM 7000/8000 SERIES ALLOY 7149 AT ROOM TEMPERATURE

Product Form	Condition/Heat Treatment	K_{Ic} $(ksi\sqrt{in})$								
		Specimen Orientation								
		L-T			T-L			S-L		
		Mean K_{Ic}	Std Dev	n	Mean K_{Ic}	Std Dev	n	Mean K_{Ic}	Std Dev	n
Extrusion	T73511	31.5	0.8	3	24.2	0.3	3	---	---	---

TABLE 8.14.1.2.1

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF STRESS INTENSITY FACTOR ΔK 7149 AT ROOM TEMPERATURE

ORIENTATION: L-T **ENVIRONMENT: Lab Air**

CONDITION/ HEAT TREATMENT	PRODUCT FORM	R	FREQ (Hz)	*FCGR* (10^{-6} *in/cycle*)					
				ΔK Level (*Ksi√in*)					
				2.5	5.0	10.0	20.0	50.0	100.0
T73511	EXTRUSION	0.1	2-10		1.61	8.05	54.43		
		0.1	1-20		1.65				

TABLE 8.14.1.2.2

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF STRESS INTENSITY FACTOR ΔK 7149 AT ROOM TEMPERATURE

ORIENTATION: L-T **ENVIRONMENT: S.S.W.**

CONDITION/ HEAT TREATMENT	PRODUCT FORM	R	FREQ (Hz)	FCGR (10^{-6} in/cycle) ΔK Level (Ksi√in)					
				2.5	5.0	10.0	20.0	50.0	100.0
T73511	EXTRUSION	0.1	1-10		1.68	24.26	158.16		

TABLE 8.14.1.2.3

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF STRESS INTENSITY FACTOR ΔK 7149 AT ROOM TEMPERATURE

ORIENTATION: T-L **ENVIRONMENT: Lab Air**

CONDITION/ HEAT TREATMENT	PRODUCT FORM	R	FREQ (Hz)	*FCGR* (10^{-6} *in/cycle*) ΔK *Level* (*Ksi√in*)					
				2.5	5.0	10.0	20.0	50.0	100.0
T73511	EXTRUSION	0.1	10			12.55	167.45		
		0.1	10-13			12.39	94.91		
		0.1	10-20		1.91	8.89			

TABLE 8.14.1.2.4

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF STRESS INTENSITY FACTOR ΔK 7149 AT ROOM TEMPERATURE

ORIENTATION: T-L **ENVIRONMENT: S.S.W.**

CONDITION/ HEAT TREATMENT	PRODUCT FORM	R	FREQ (Hz)	*FCGR* (10^{-6} *in/cycle*) ΔK Level ($Ksi\sqrt{in}$) 2.5	5.0	10.0	20.0	50.0	100.0
T73511	EXTRUSION	0.1	1-10		2.77	29.27	211.54		

TABLE 8.14.2.1

ALUMINUM 7149 K_{Ic}

CONDITION	PRODUCT FORM	PRODUCT THICK (in.)	TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN WIDTH (in.) W	SPECIMEN THICK (in.) B	SPECIMEN DESIGN	CRACK LENGTH (in.) A	$2.5 * (K_{Ic}/TYS)^2$ (in.)	K_{Ic} K_{Ic} (Ksi * $\sqrt{in.}$)	K_{Ic} K_{Ic} MEAN	K_{Ic} STAN DEV	DATE	REFER
T73511	Extrusion	3.00	R.T.	L-T	66.3	2.001	1.007	CT	1.038	0.59	32.32	31.5	0.8	1976	NC001
		3.00			66.3	2.002	1.007	CT	1.032	0.54	30.82			1976	NC001
		3.00			66.3	2.002	1.007	CT	1.025	0.56	31.42			1976	NC001
T73511	Extrusion	3.00	R.T.	T-L	63.7	2.002	1.007	CT	1.028	0.37	24.55	24.2	0.3	1976	NC001
		3.00			63.7	2.001	1.007	CT	1.033	0.35	24.08			1976	NC001
		3.00			63.7	2.001	1.007	CT	1.001	0.35	24.07			1976	NC001

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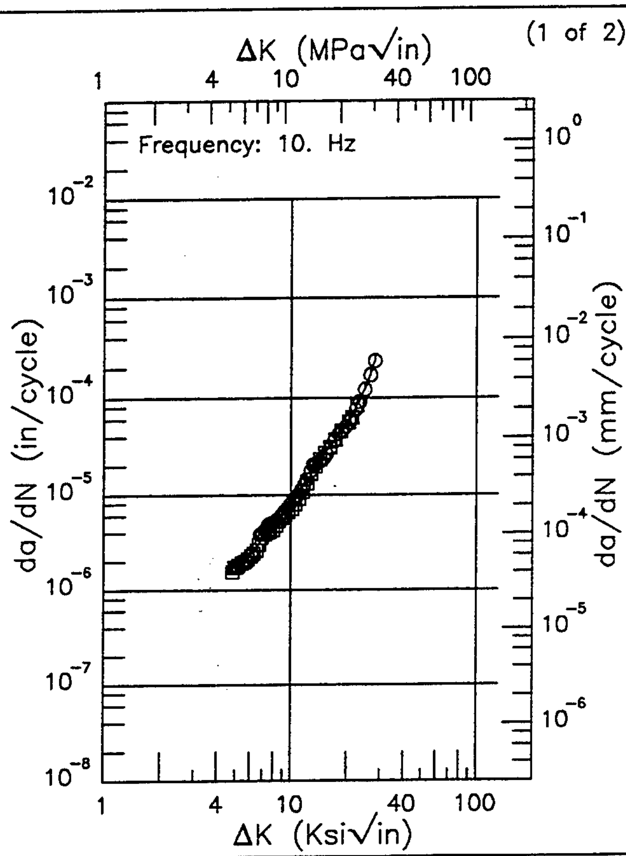
F 7149

Condition/Ht: T73511
Form: 3 in. Extrusion
Specimen Type: CT
Orientation: L–T
Stress Ratio: 0.1
Environment: LAB AIR; RT

Yield Strength: 66.3 ksi
Ult. Strength: 76.4 ksi
Specimen Thk: 1.003 – 1.004 in.
Specimen Width: 4.5 in.
Ref: NC002

(1 of 2)



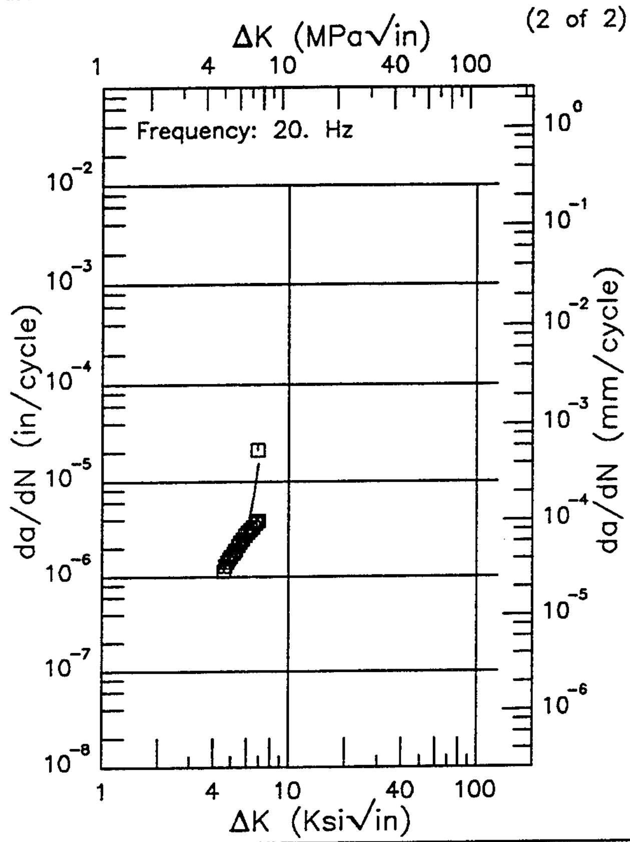
ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)
4.82 (min)	1.48
5.	1.61
6.	2.43
7.	3.42
8.	4.63
9.	6.15
10.	8.05
13.	17.0
16.	30.7
20.	54.4
25.	126.
27.96 (max)	231.

RMS % Error: 8.09

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

(2 of 2)



ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)
4.54 (min)	1.14
5.	1.65
6.	2.82
6.92 (max)	15.3

RMS % Error: 31.83

Life Prediction Ratio Summary

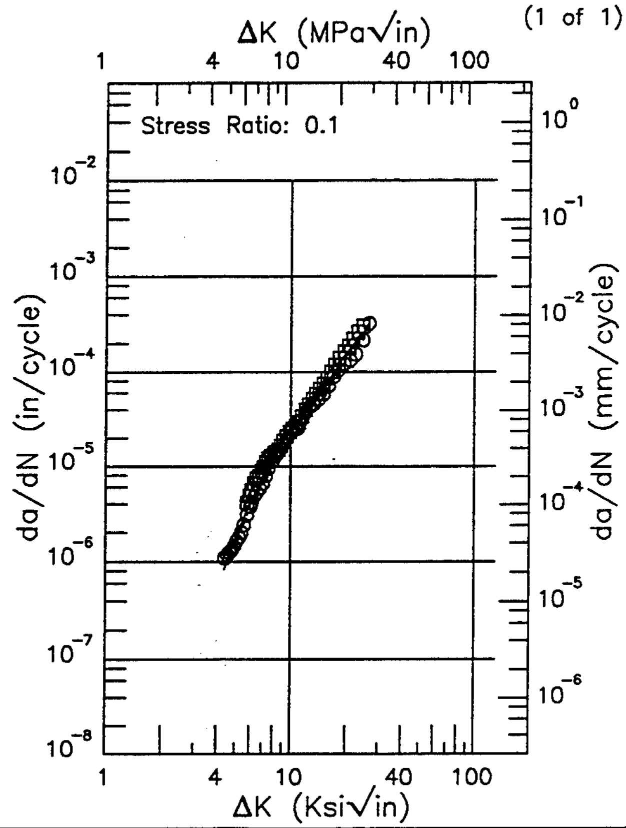
0. .5 .8 1.25 2.

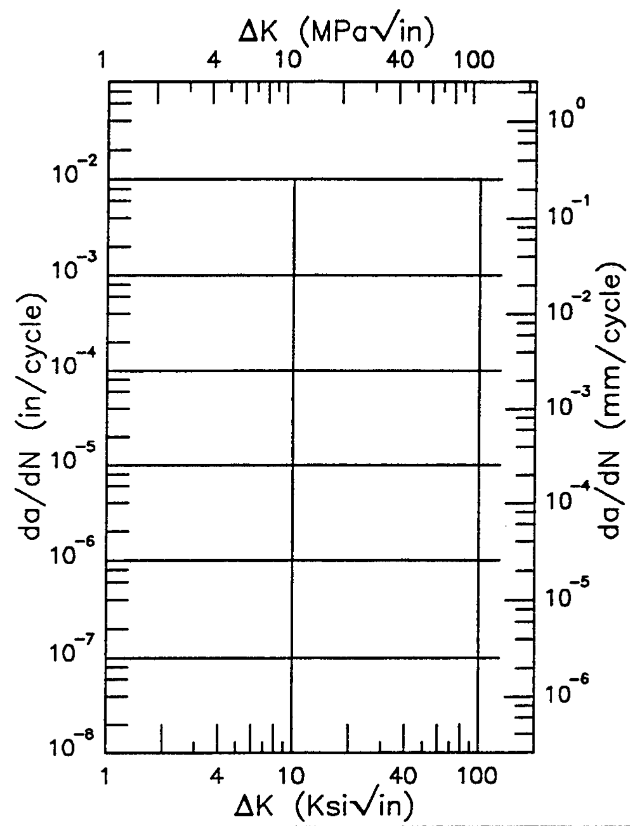
Figure 8.14.3.1.1

Condition/Ht: T73511
Form: 3 in. Extrusion
Specimen Type: CT
Orientation: L–T
Frequency: 1 – 10 Hz
Environment: S.S.W.; RT

Yield Strength: 66.3 ksi
Ult. Strength: 76.4 ksi
Specimen Thk: 1.004 in.
Specimen Width: 4.5 in.
Ref: NC002

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
4.39 (min)	0.835
5.	1.68
6.	4.00
7.	7.57
8.	12.3
9.	17.9
10.	24.3
13.	46.8
16.	81.9
20.	158.
25.	265.
26.48 (max)	319.

ΔK (Ksi√in) da/dN (10^{-6}in/cycle)

RMS % Error
14.40

Life Prediction Ratio Summary
0. .5 .8 1.25 2.

RMS % Error

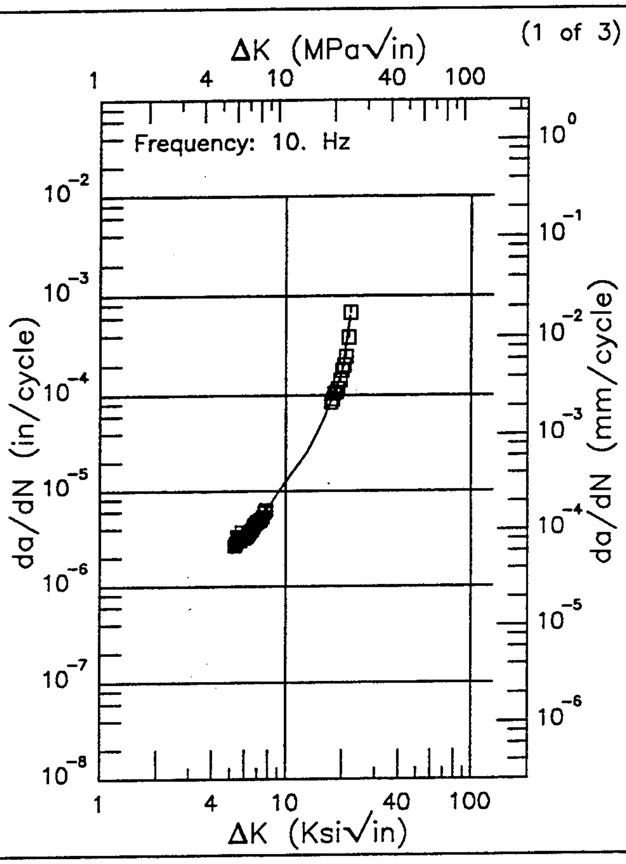
Life Prediction Ratio Summary
0. .5 .8 1.25 2.

Figure 8.14.3.1.2

F 7149

Condition/Ht: T73511	Yield Strength: 63.7 ksi
Form: 3 in. Extrusion	Ult. Strength: 74.5 ksi
Specimen Type: CT	Specimen Thk: 1.002 – 1.004 in.
Orientation: T–L	Specimen Width: 7.4 in.
Stress Ratio: 0.1	Ref: NC002
Environment: LAB AIR; RT	

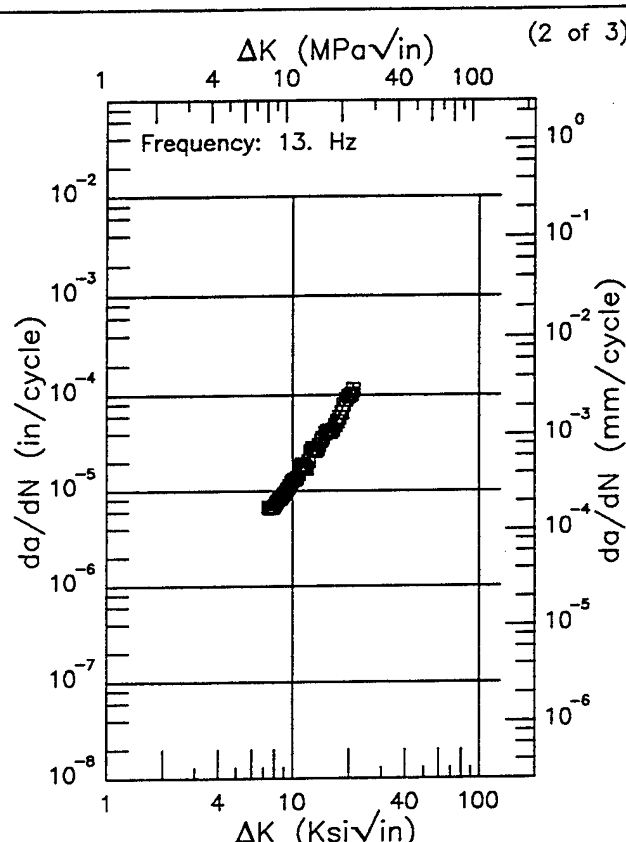
(1 of 3)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
5.28 (min)	2.91
6.	3.30
7.	4.60
8.	6.70
9.	9.46
10.	12.6
13.	25.5
16.	58.9
20.	167.
22.13 (max)	628.

RMS % Error	Life Prediction Ratio Summary
6.57	0. .5 .8 1.25 2.

(2 of 3)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
7.40 (min)	6.51
8.	7.16
9.	9.23
10.	12.4
13.	26.0
16.	43.8
20.	94.9
21.07 (max)	117.

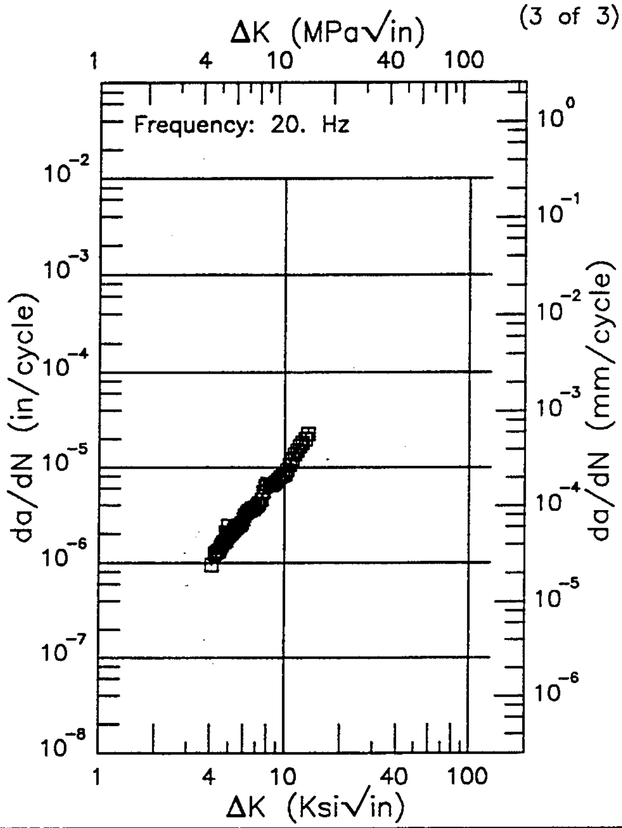
RMS % Error	Life Prediction Ratio Summary
6.01	0. .5 .8 1.25 2.

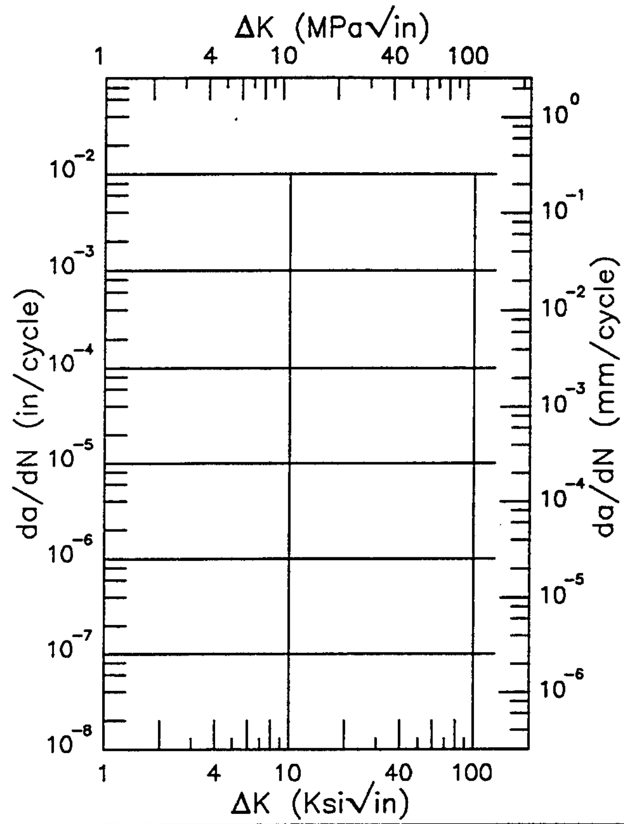
Figure 8.14.3.1.3

Condition/Ht: T73511
Form: 3 in. Extrusion
Specimen Type: CT
Orientation: T–L
Stress Ratio: 0.1
Environment: LAB AIR; RT

Yield Strength: 63.7 ksi
Ult. Strength: 74.5 ksi
Specimen Thk: 1.002 – 1.004 in.
Specimen Width: 7.4 in.
Ref: NC002

(3 of 3)





ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)
4.06 (min)	0.987
5.	1.91
6.	2.79
7.	4.06
8.	5.77
9.	7.38
10.	8.89
13.	20.9
13.33 (max)	20.9

ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)

RMS % Error	Life Prediction Ratio Summary
6.72	0. .5 .8 1.25 2.

RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

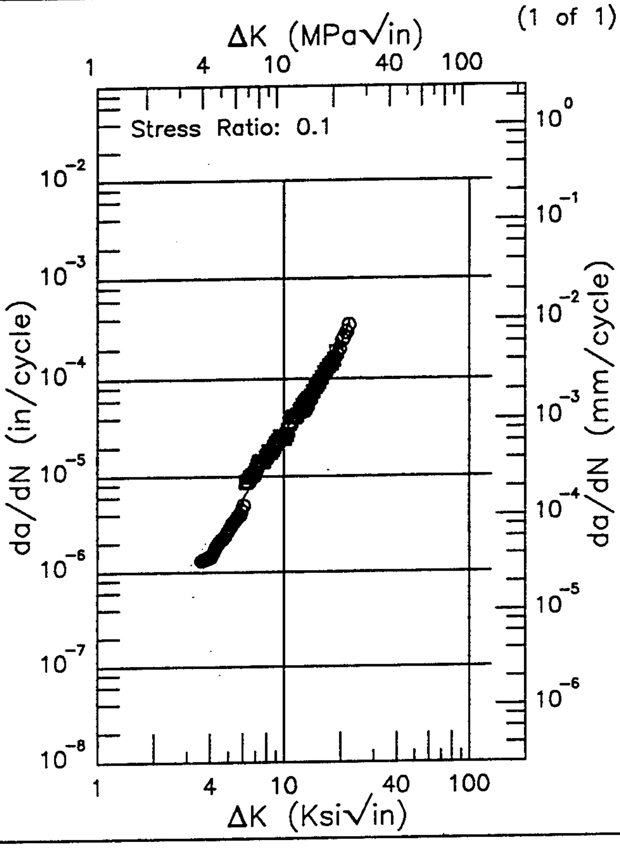
Figure 8.14.3.1.3 (Concluded)

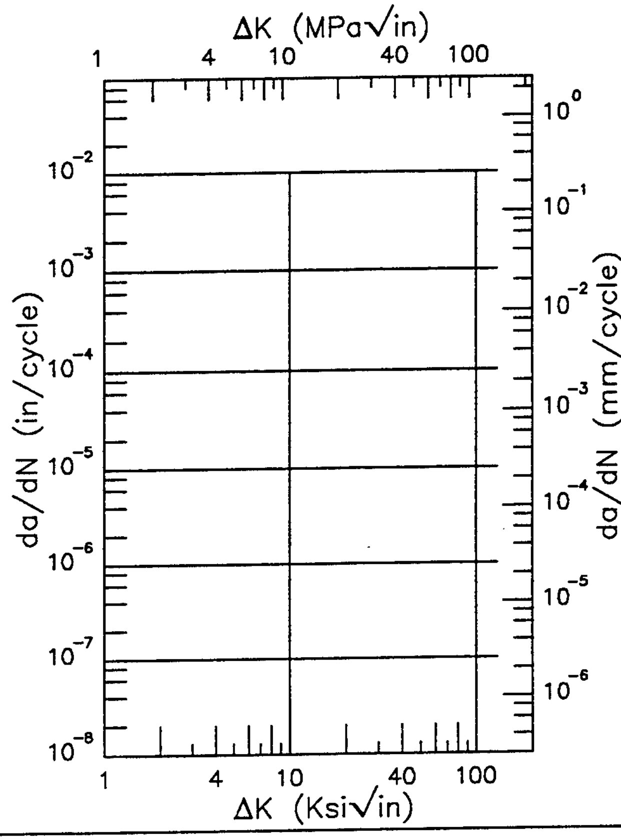
R 7149

Condition/Ht: T73511
Form: 3 in. Extrusion
Specimen Type: CT
Orientation: T–L
Frequency: 1 – 10 Hz
Environment: S.S.W.; RT

Yield Strength: 63.7 ksi
Ult. Strength: 74.5 ksi
Specimen Thk: 1.002 – 1.004 in.
Specimen Width: 7.4 in.
Ref: NC002

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)
3.59 (min)	1.29
4.	1.48
5.	2.77
6.	5.61
7.	10.4
8.	16.6
9.	23.0
10.	29.3
13.	54.9
16.	109.
20.	212.
22.13 (max)	357.

ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)

RMS % Error	Life Prediction Ratio Summary
8.63	0. .5 .8 1.25 2.

RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

Figure 8.14.3.1.4

TABLE 8.15.1.2.1

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF STRESS INTENSITY FACTOR ΔK 7150 AT ROOM TEMPERATURE

ORIENTATION: L-T **ENVIRONMENT: H.H.A.**

CONDITION/ HEAT TREATMENT	PRODUCT FORM	R	FREQ (Hz)	*FCGR* (10^{-6} *in/cycle*)					
				ΔK *Level* ($Ksi\sqrt{in}$)					
				2.5	5.0	10.0	20.0	50.0	100.0
T651	PLATE	0.33	25	0.11	3.64	24.77	199.35		

TABLE 8.15.1.2.2

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF STRESS INTENSITY FACTOR ΔK 7150 AT ROOM TEMPERATURE

ORIENTATION: L-T **ENVIRONMENT: Lab Air**

CONDITION/ HEAT TREATMENT	PRODUCT FORM	R	FREQ (Hz)	*FCGR* (10^{-6} *in/cycle*)					
				ΔK *Level* (*Ksi√in*)					
				2.5	5.0	10.0	20.0	50.0	100.0
T7751	PLATE	0.1	3		0.52	7.76			
		0.1	5	0.08	0.71	7.54			
		0.1	10	0.09	0.49	7.31			
		0.4	5	0.14	2.11	14.37			
		0.4	10	0.14	1.87	14.89			
		0.4	15	0.15	1.6	11.49			
		0.8	10	0.5	6.53				
T77511	EXTRUSION	0.1	20	0.16	2.61	9.15	60.08		
		0.1	25	0.34	3.46	8.07			
		0.4	20	0.87	2.07	4.02			
		0.8	20	0.78	6.45				

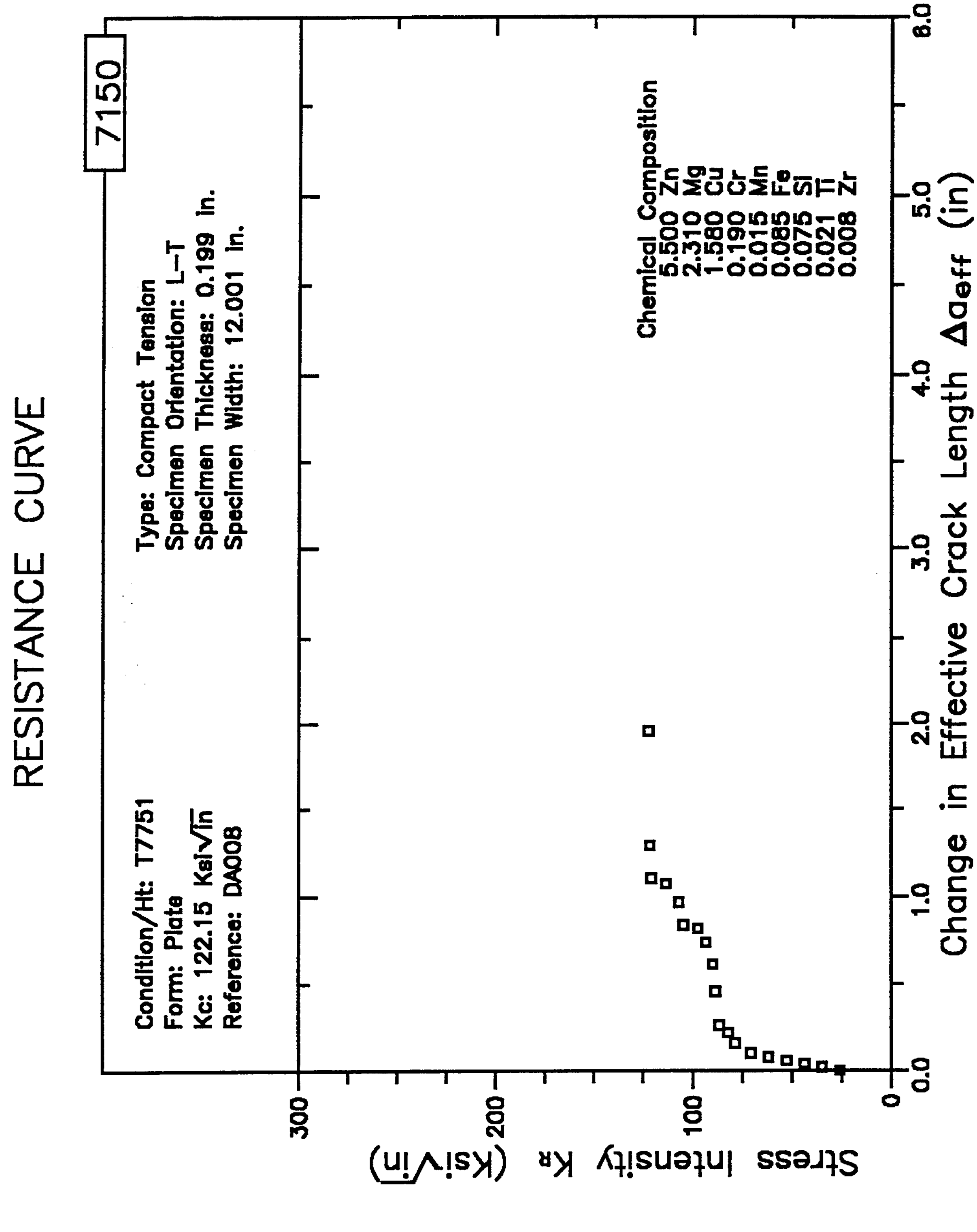


Figure 8.15.2.3.1

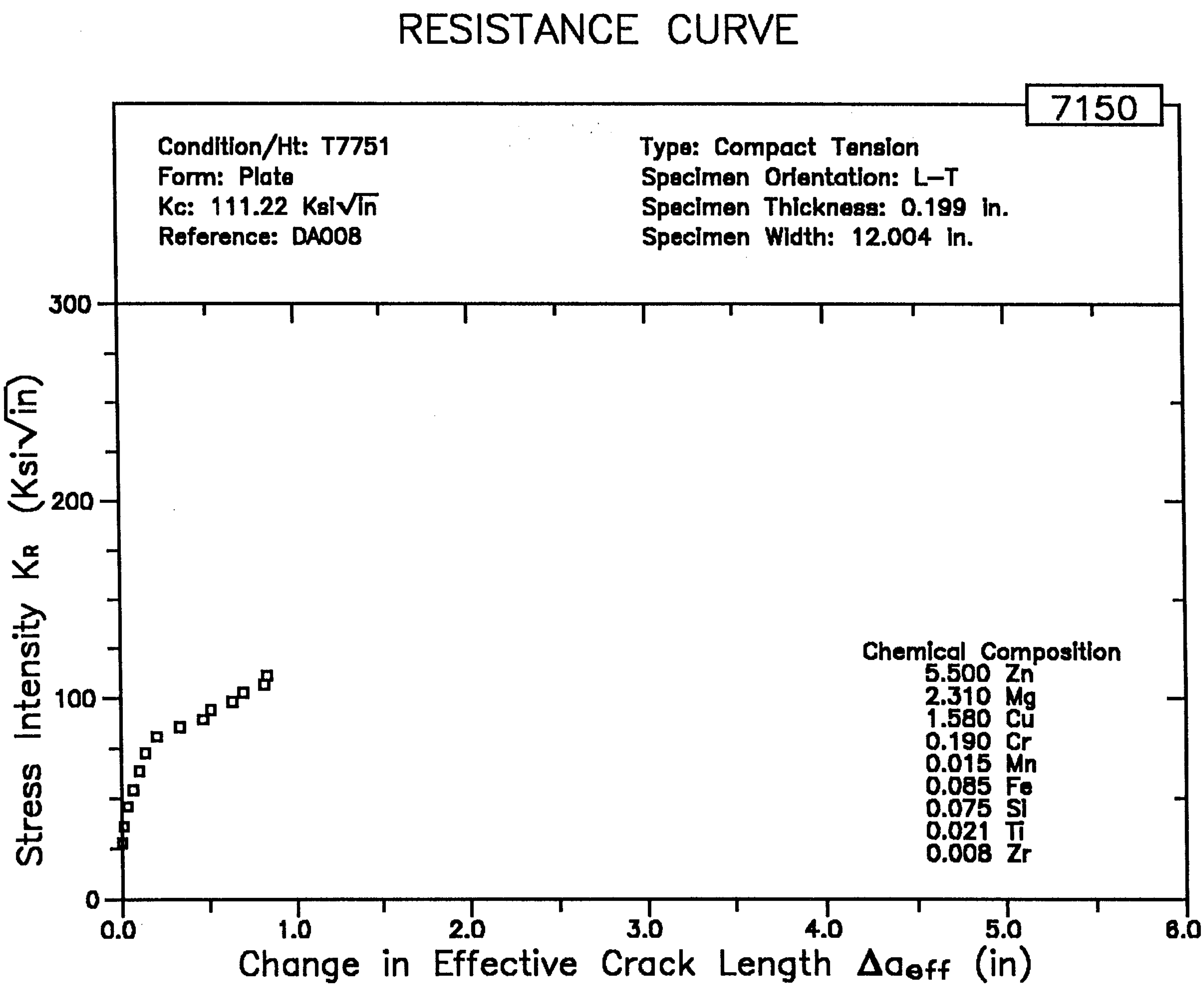


Figure 8.15.2.3.2

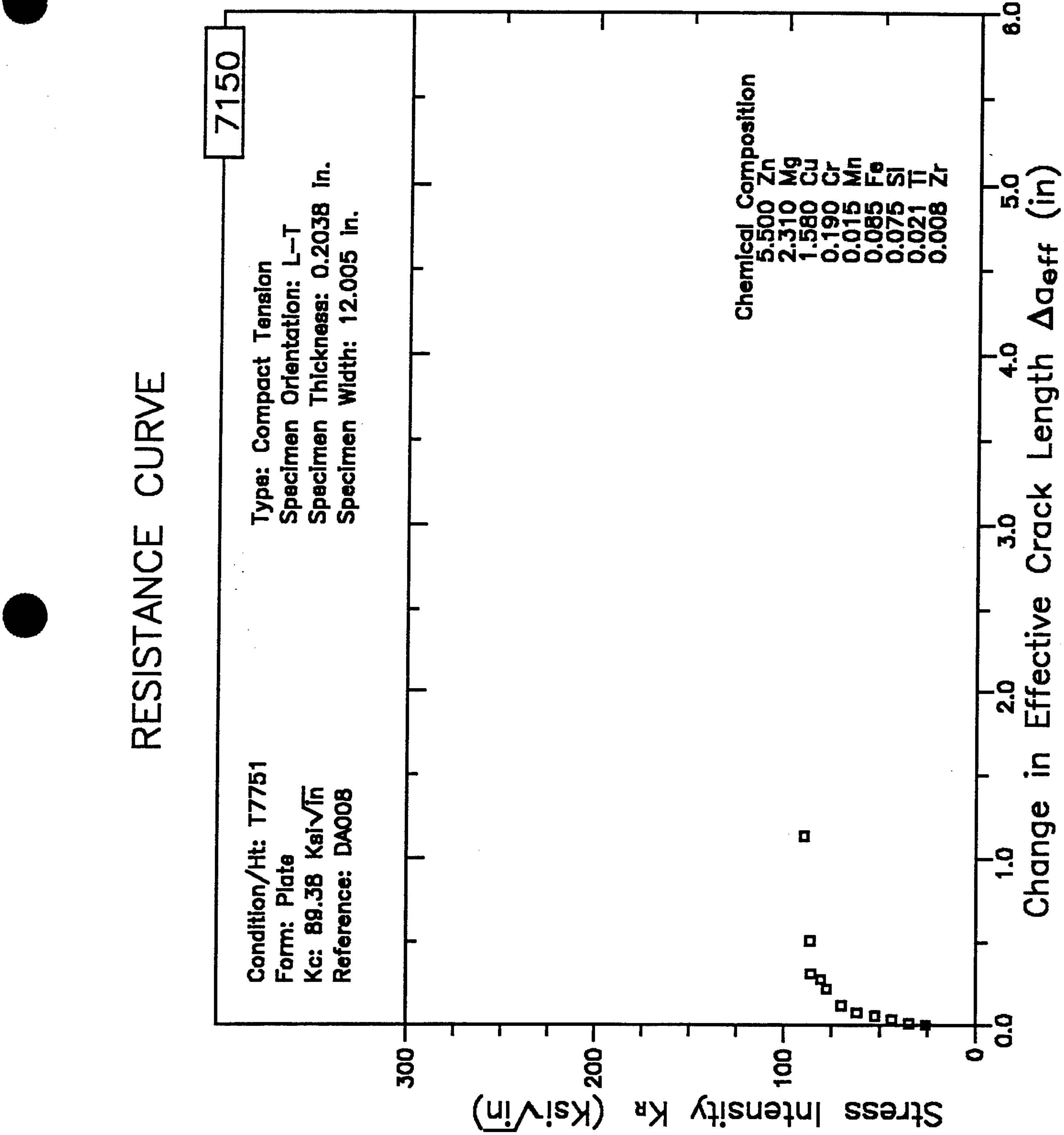


Figure 8.15.2.3.3

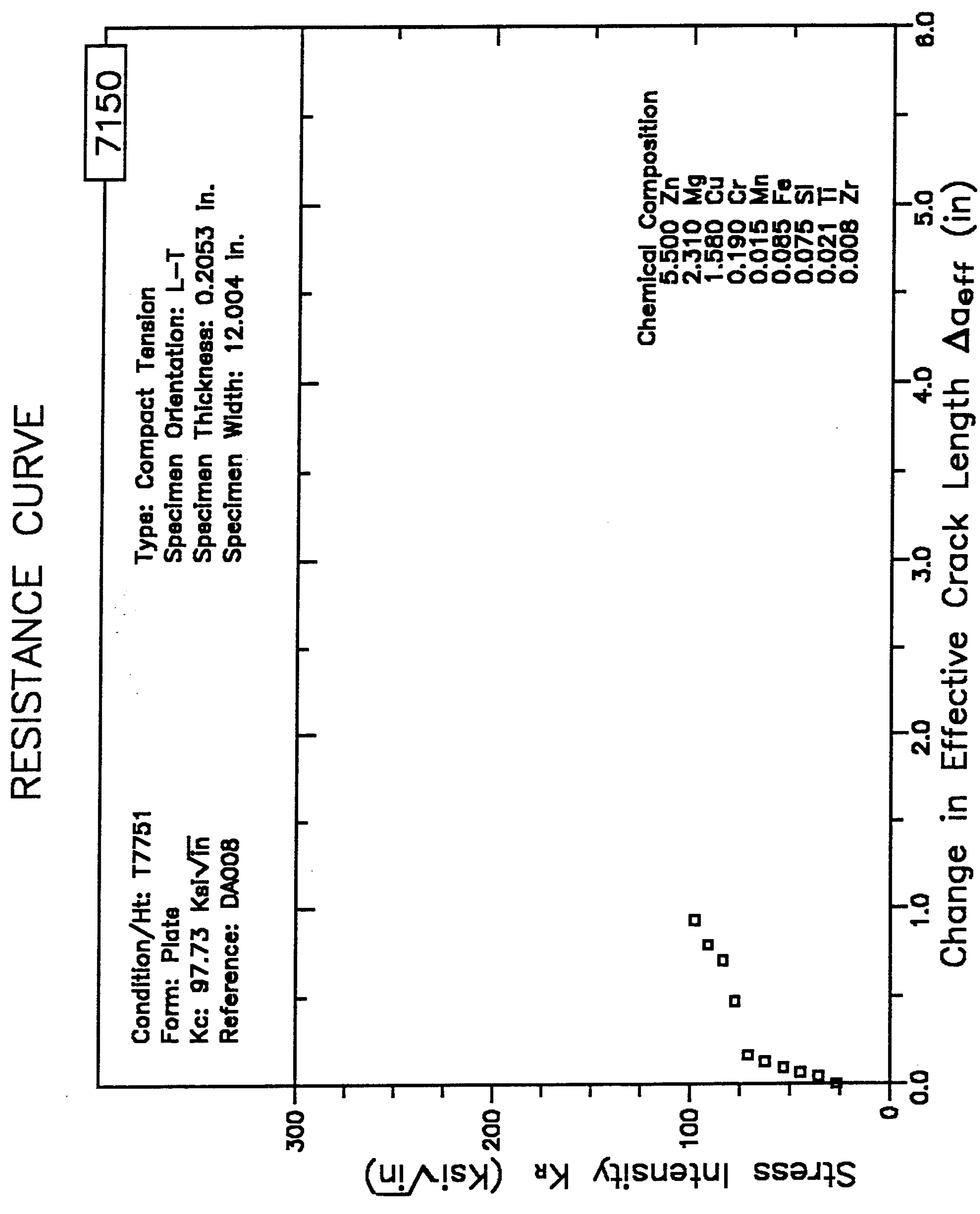


Figure 8.15.2.3.4

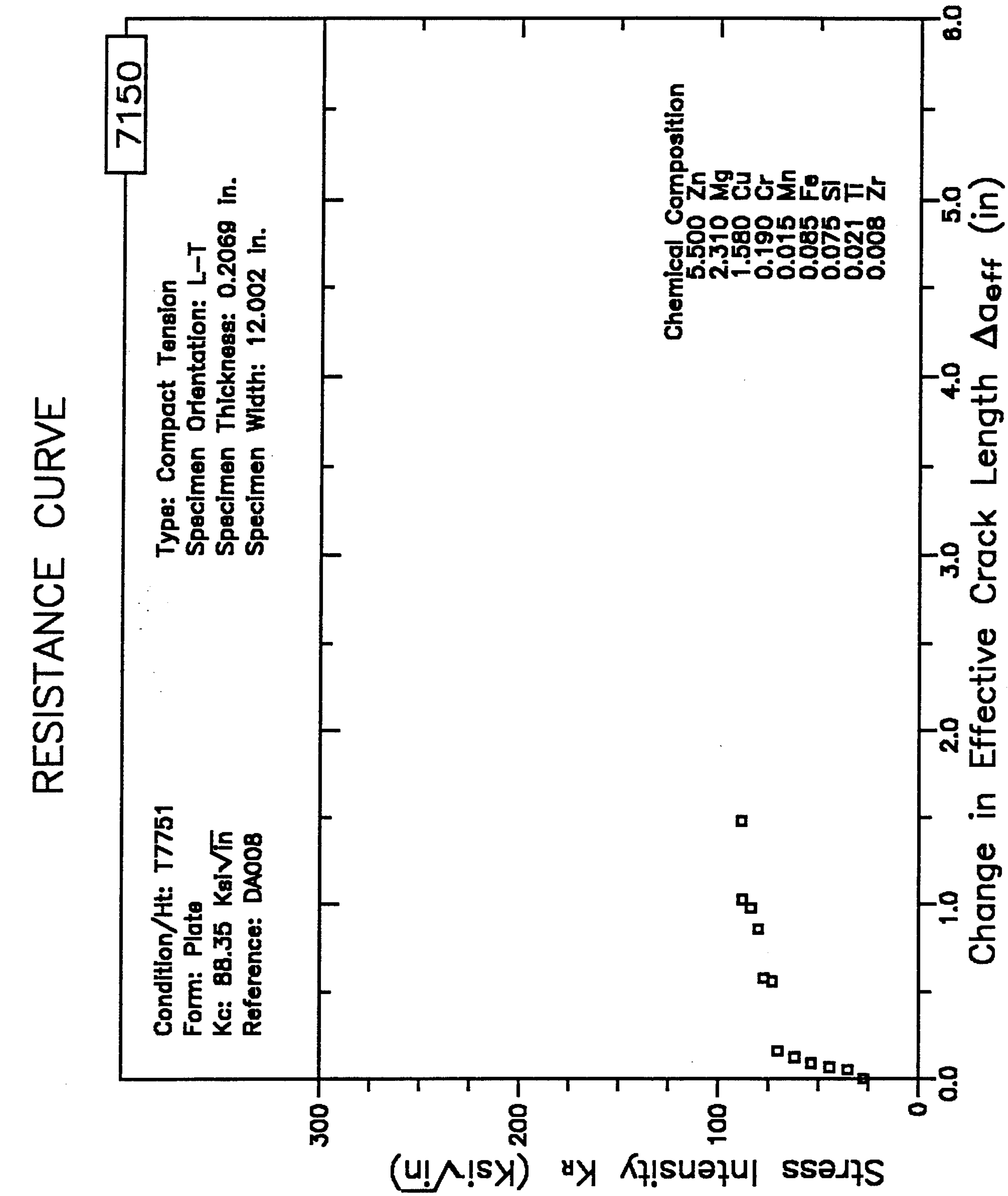


Figure 8.15.2.3.5

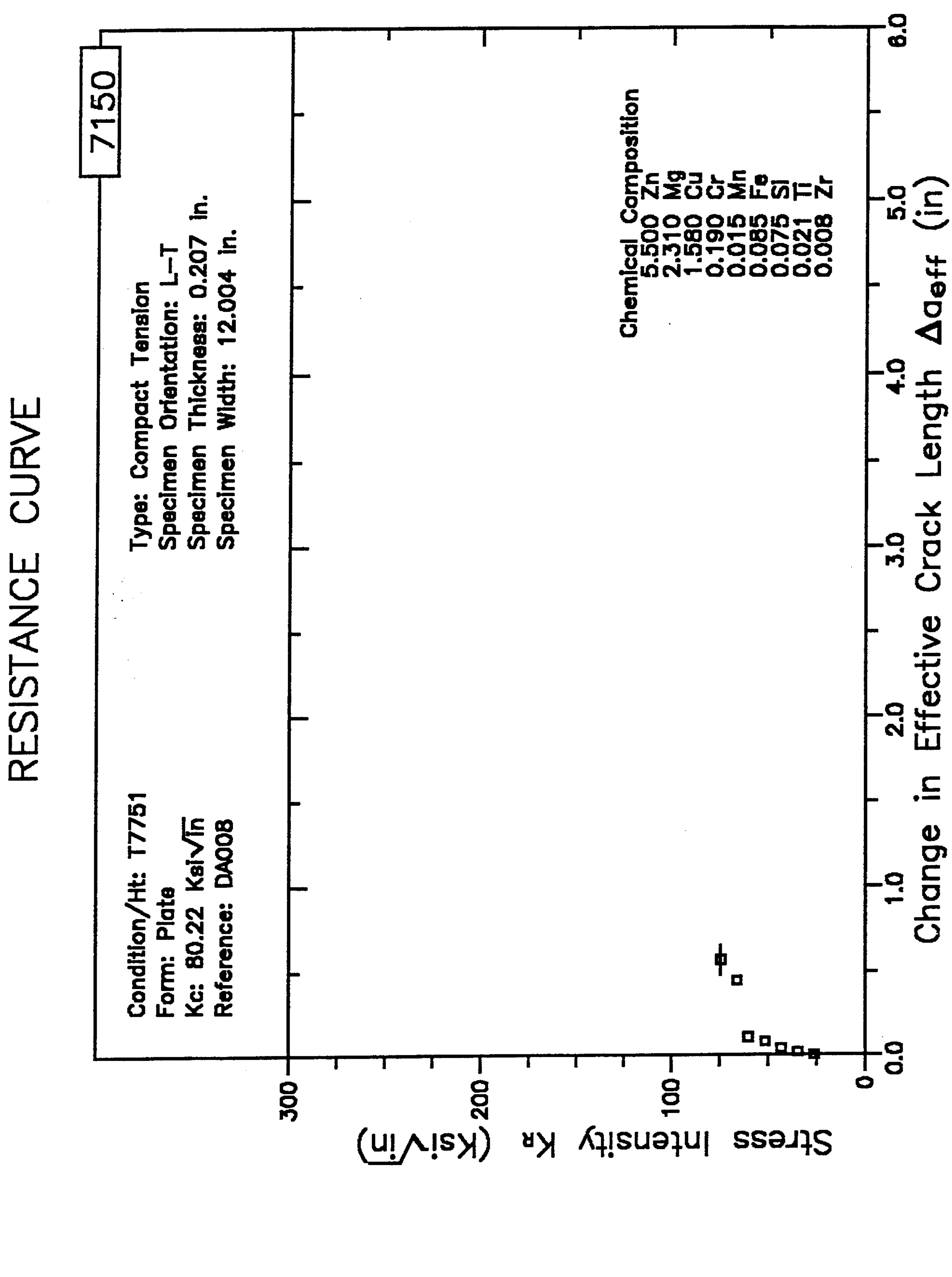


Figure 8.15.2.3.6

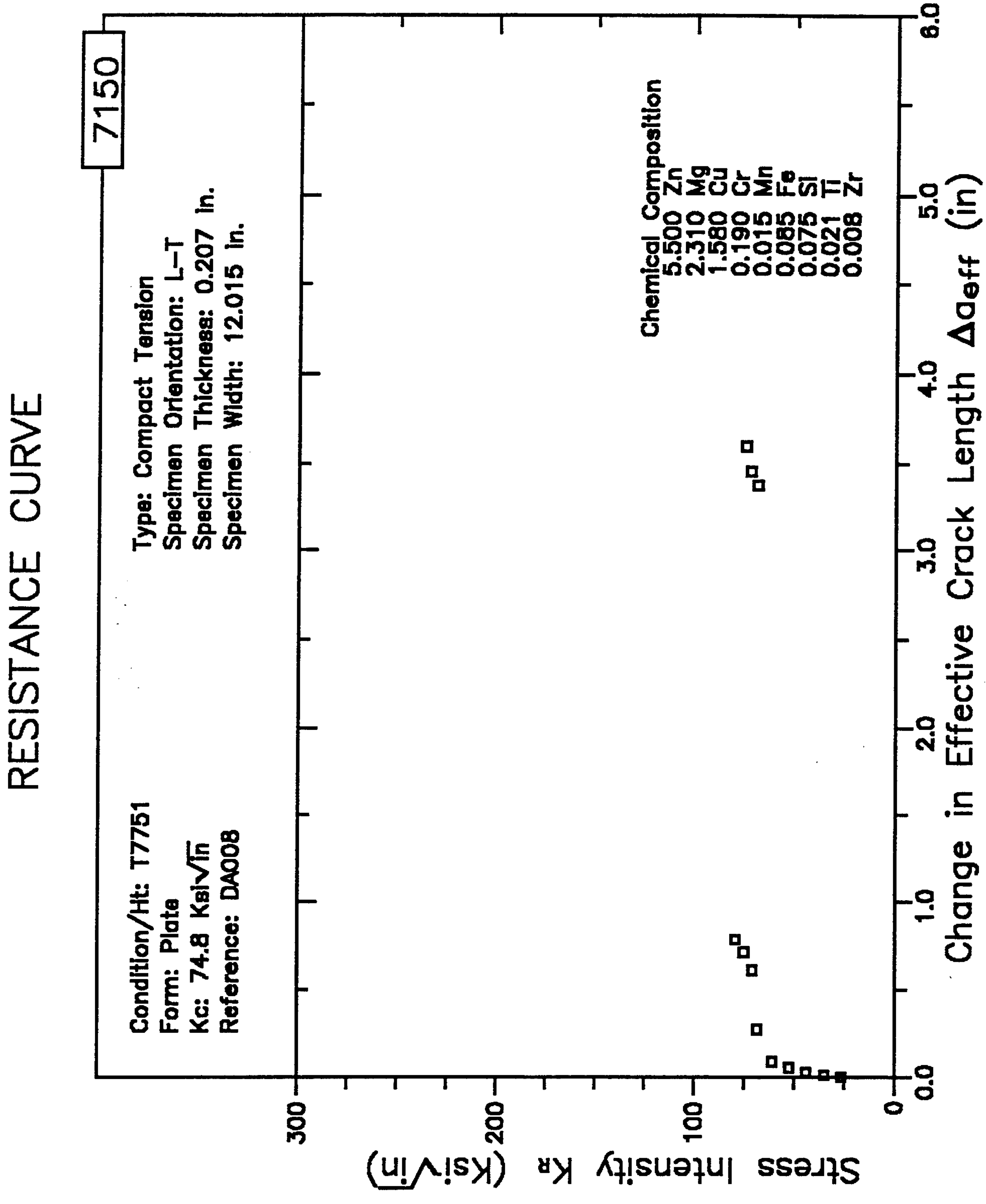


Figure 8.15.2.3.7

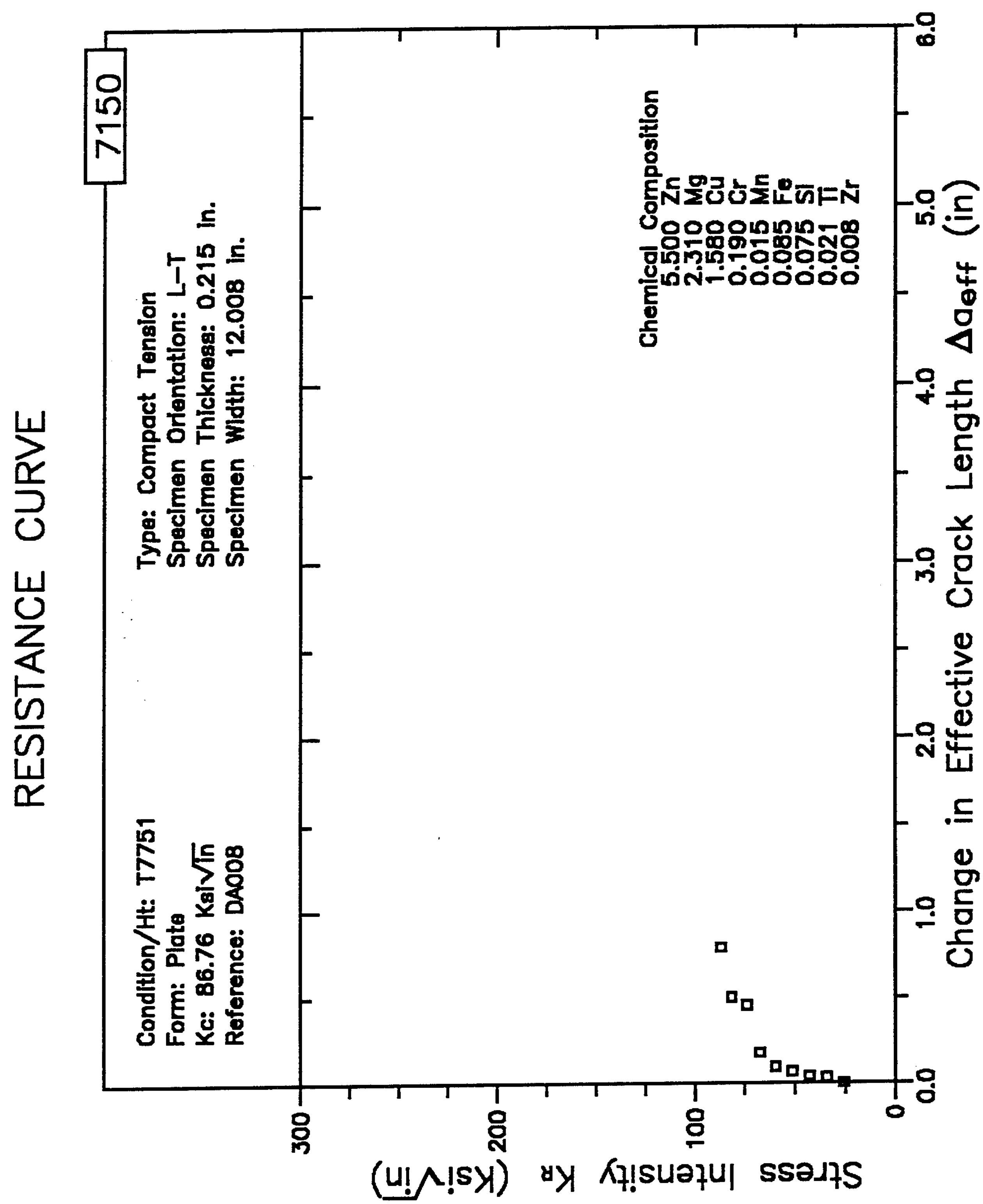


Figure 8.15.2.3.8

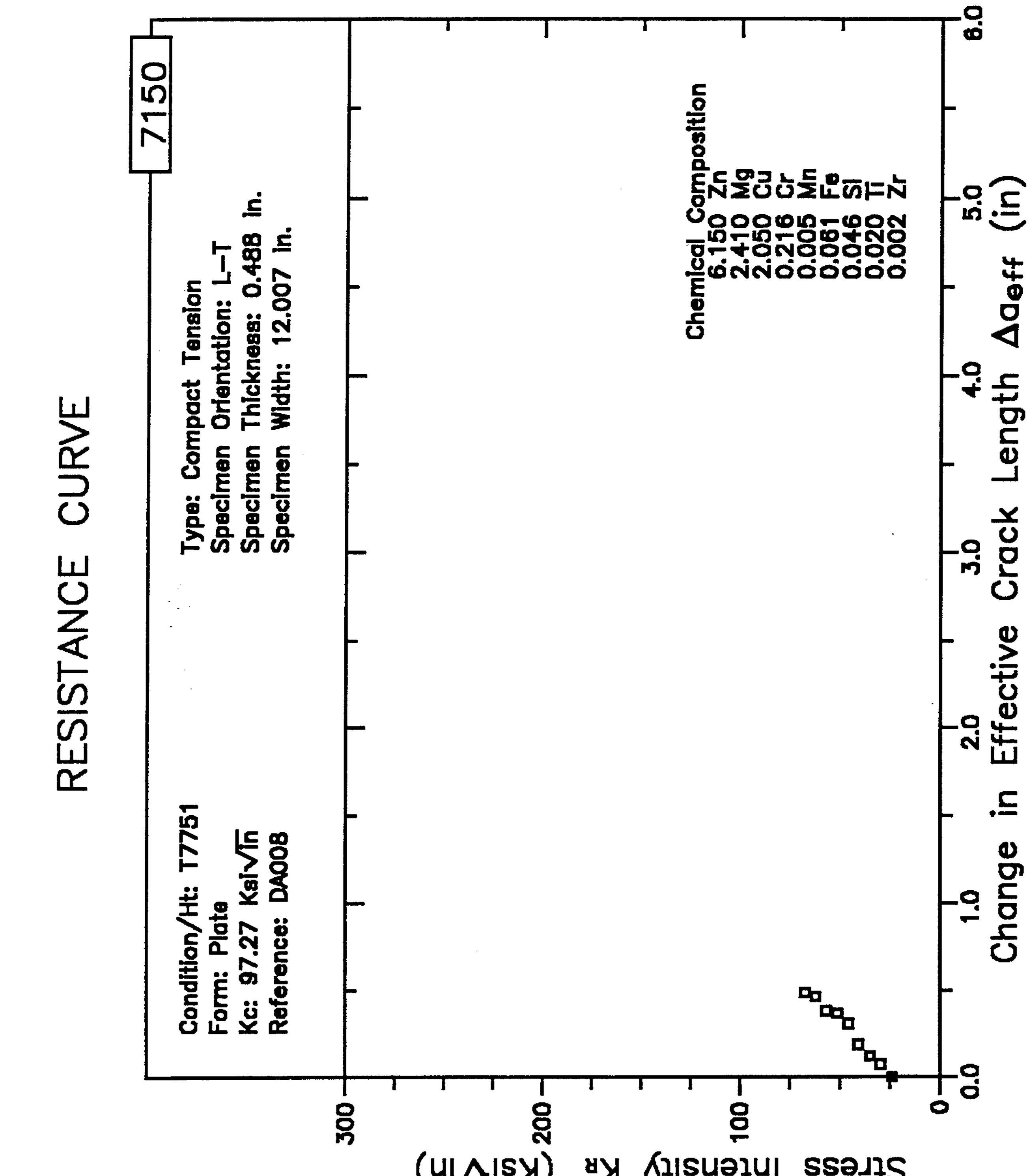


Figure 8.15.2.3.9

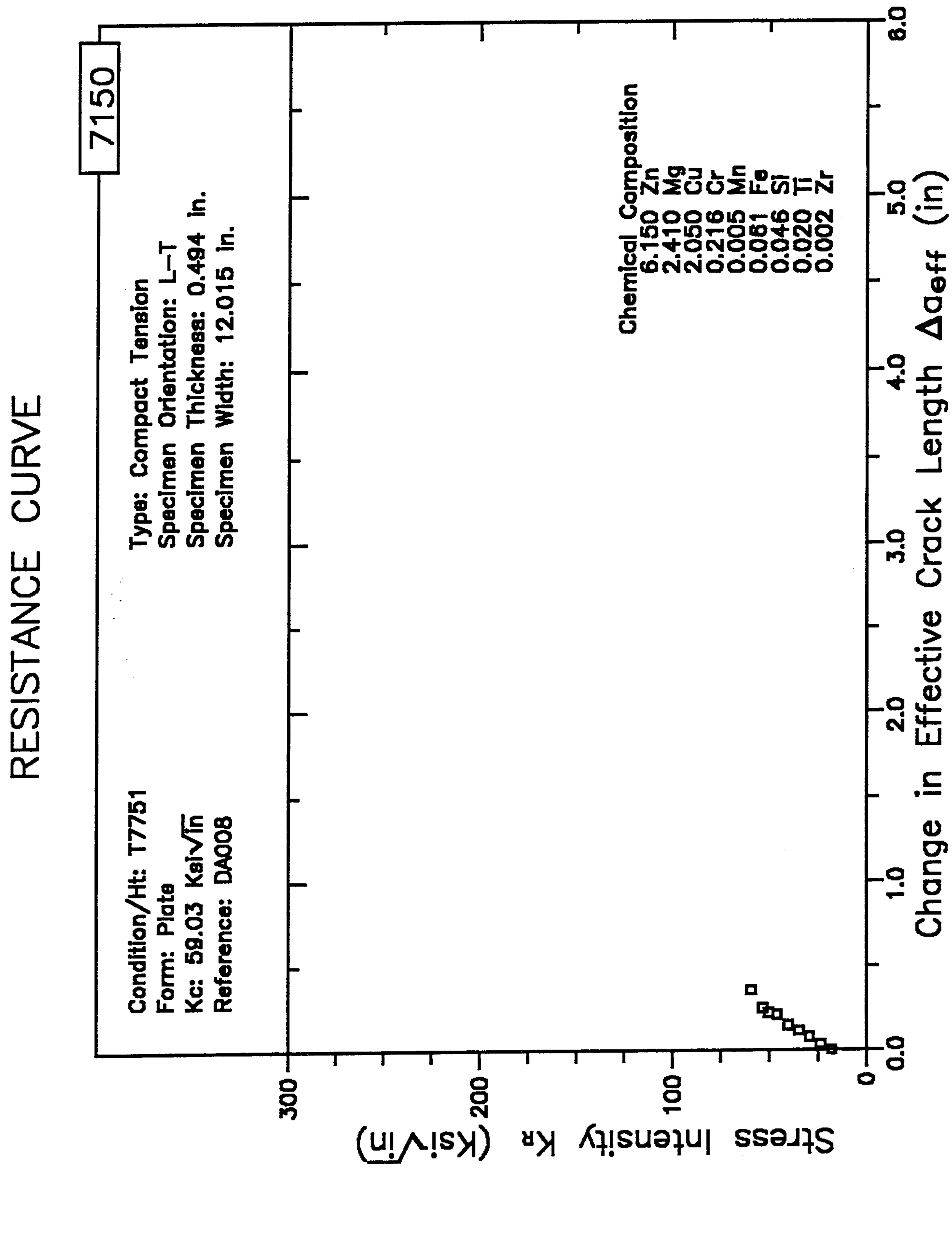


Figure 8.15.2.3.10

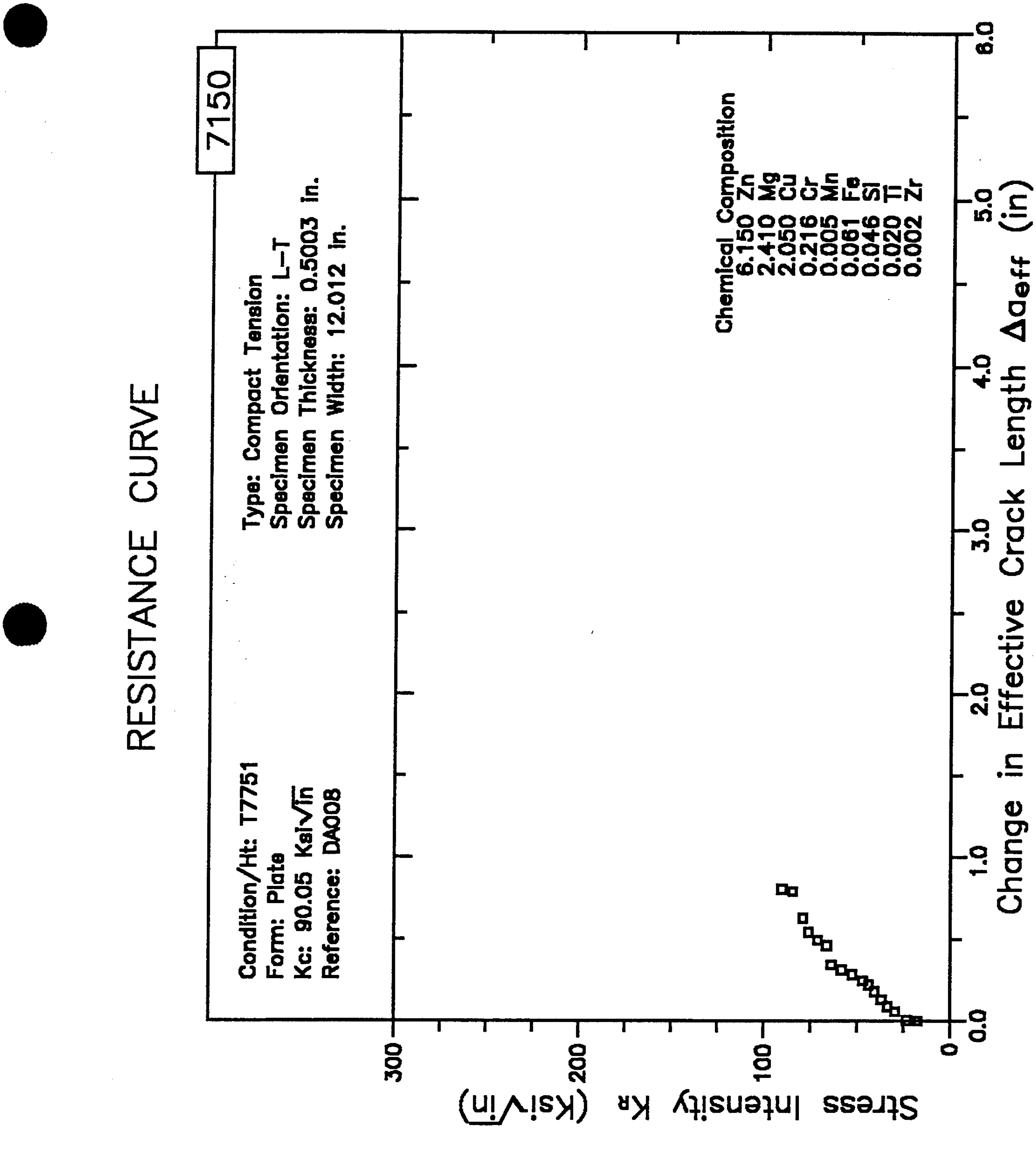


Figure 8.15.2.3.11

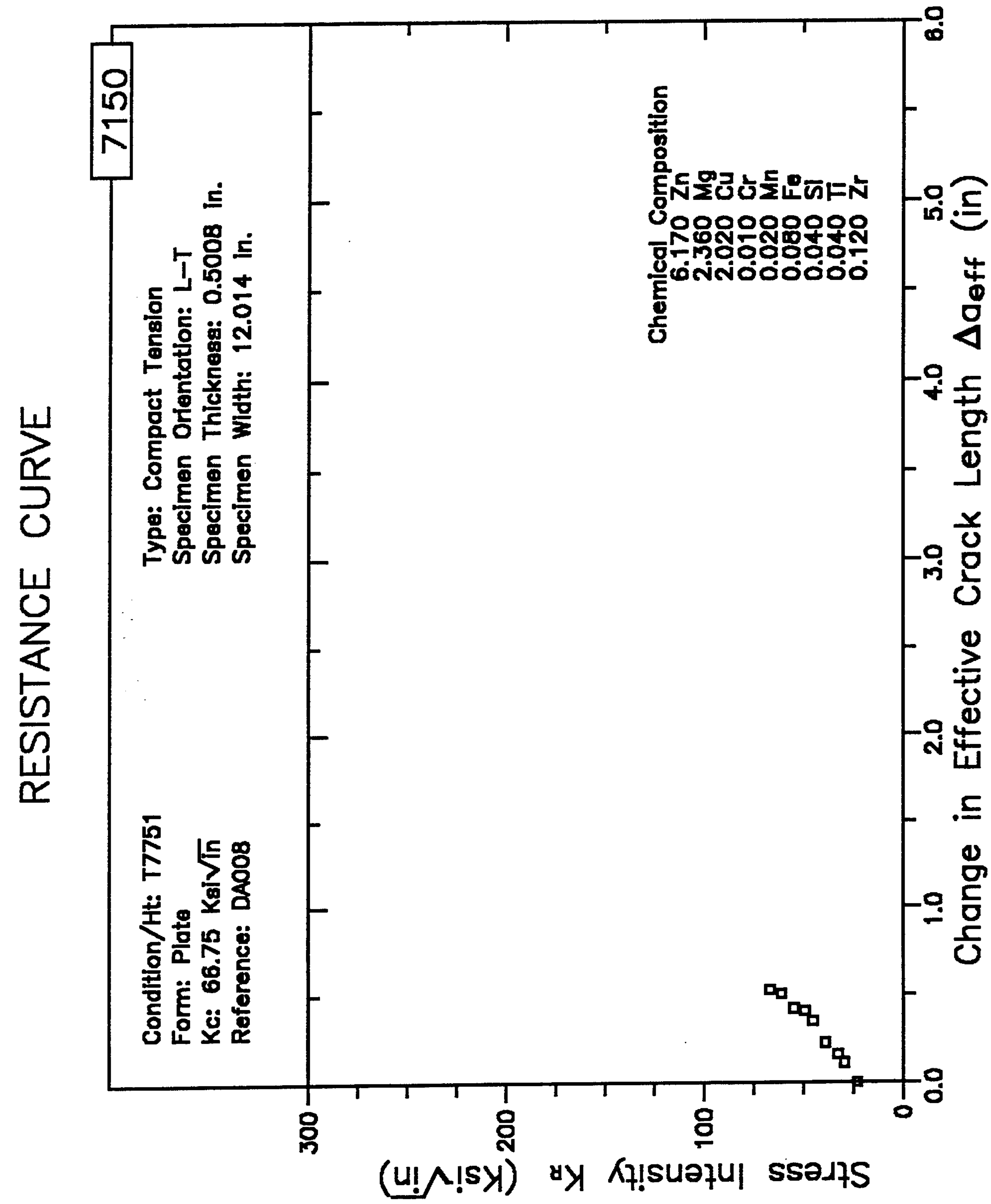


Figure 8.15.2.3.12

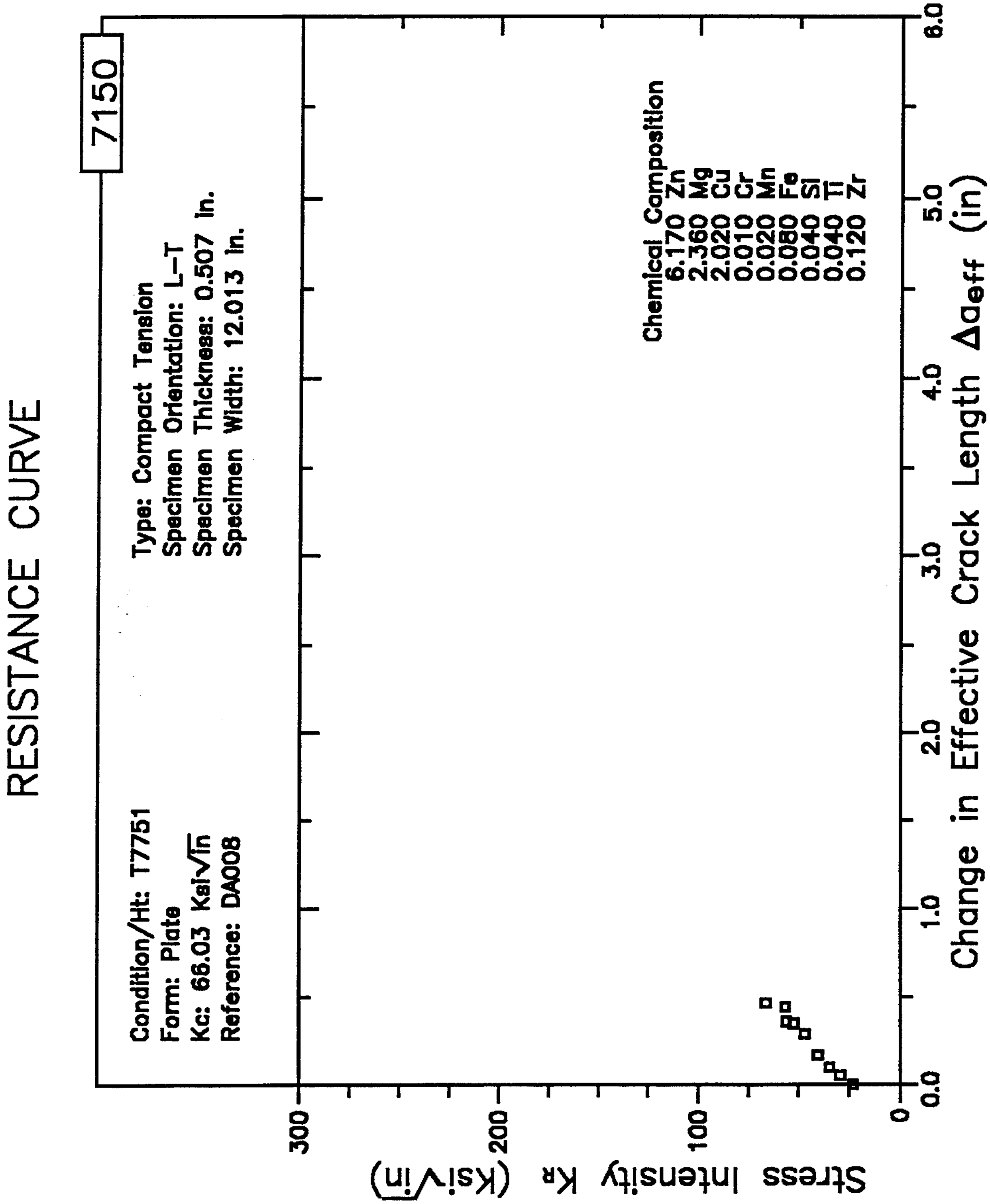


Figure 8.15.2.3.13

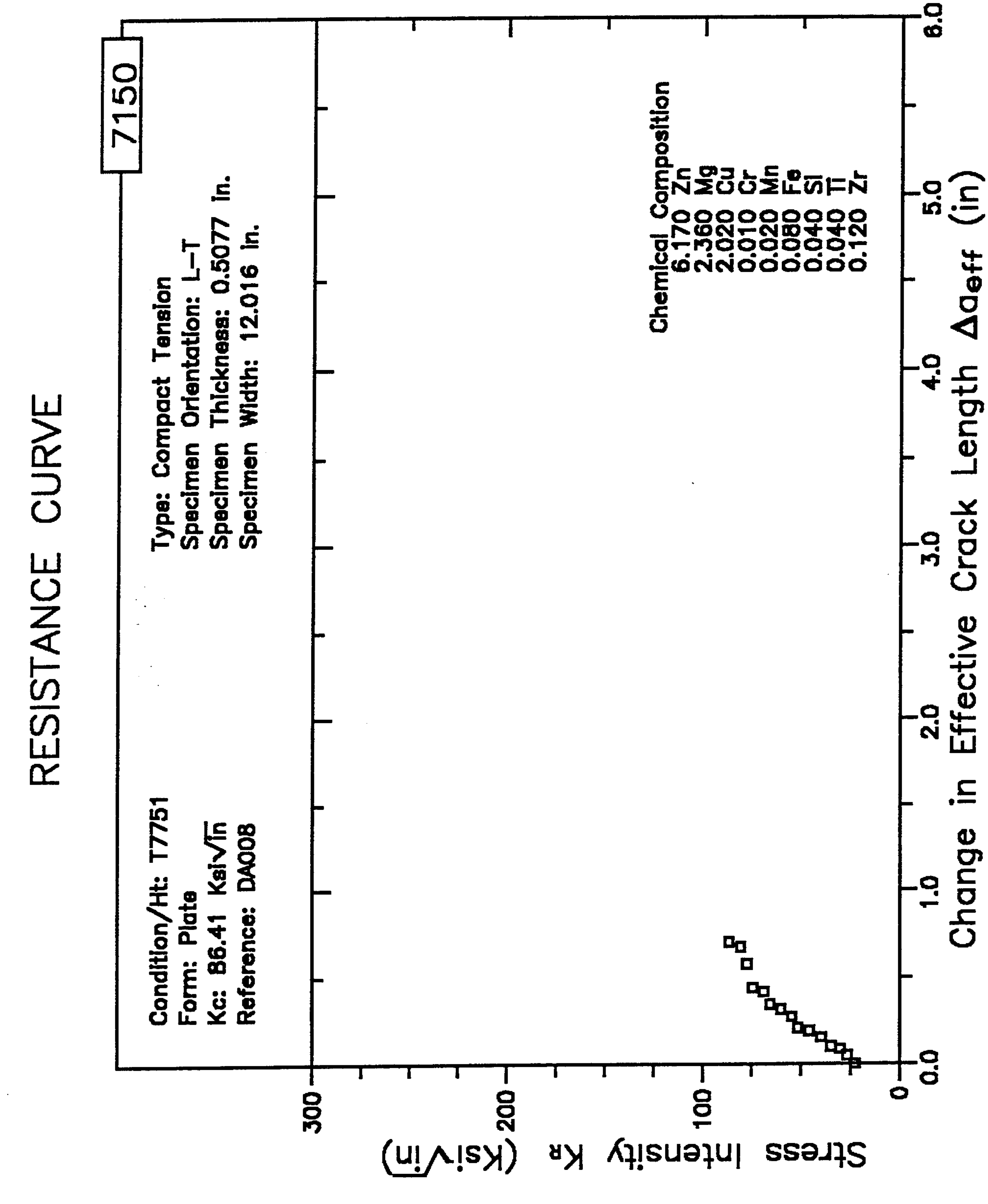


Figure 8.15.2.3.14

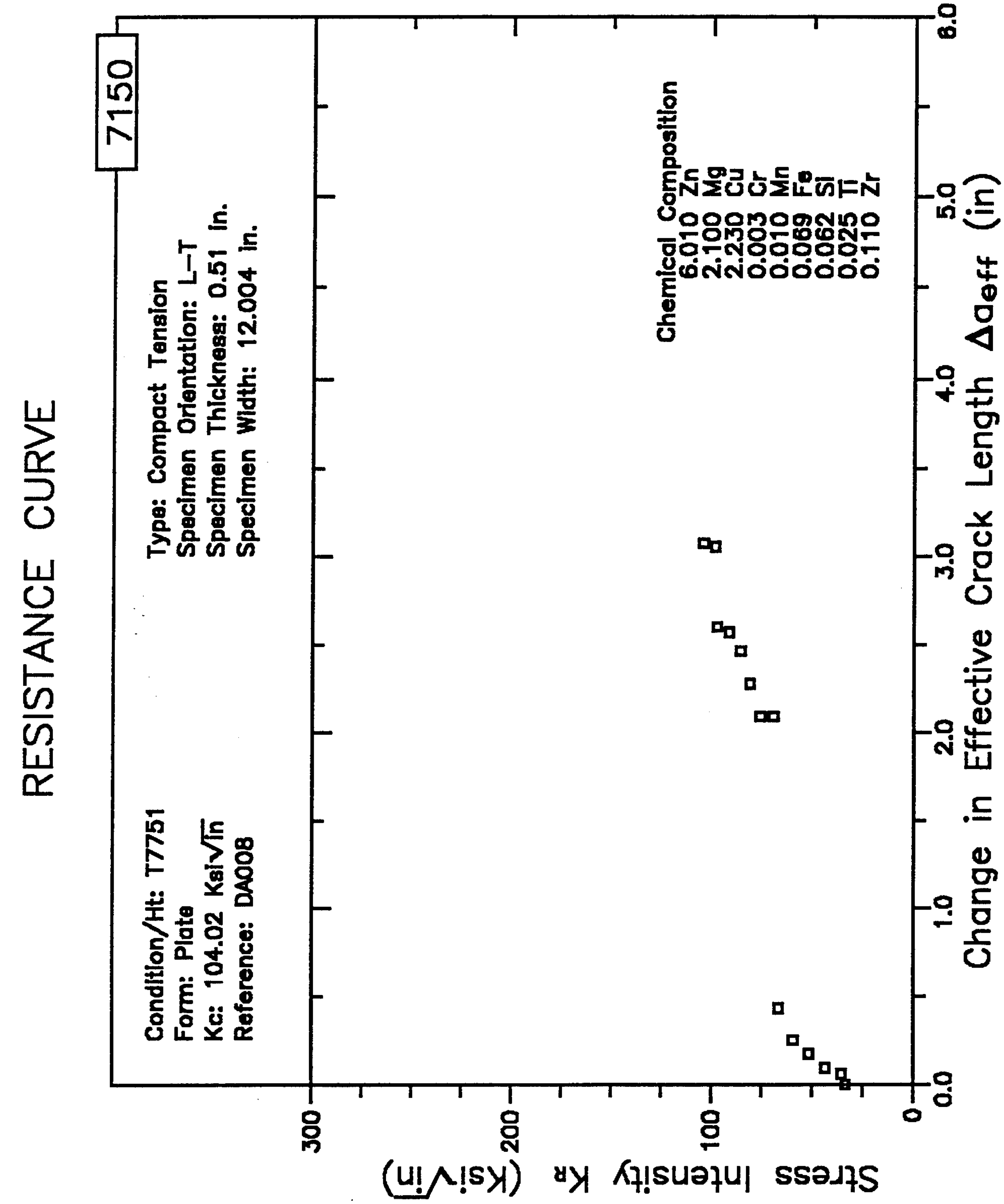


Figure 8.15.2.3.15

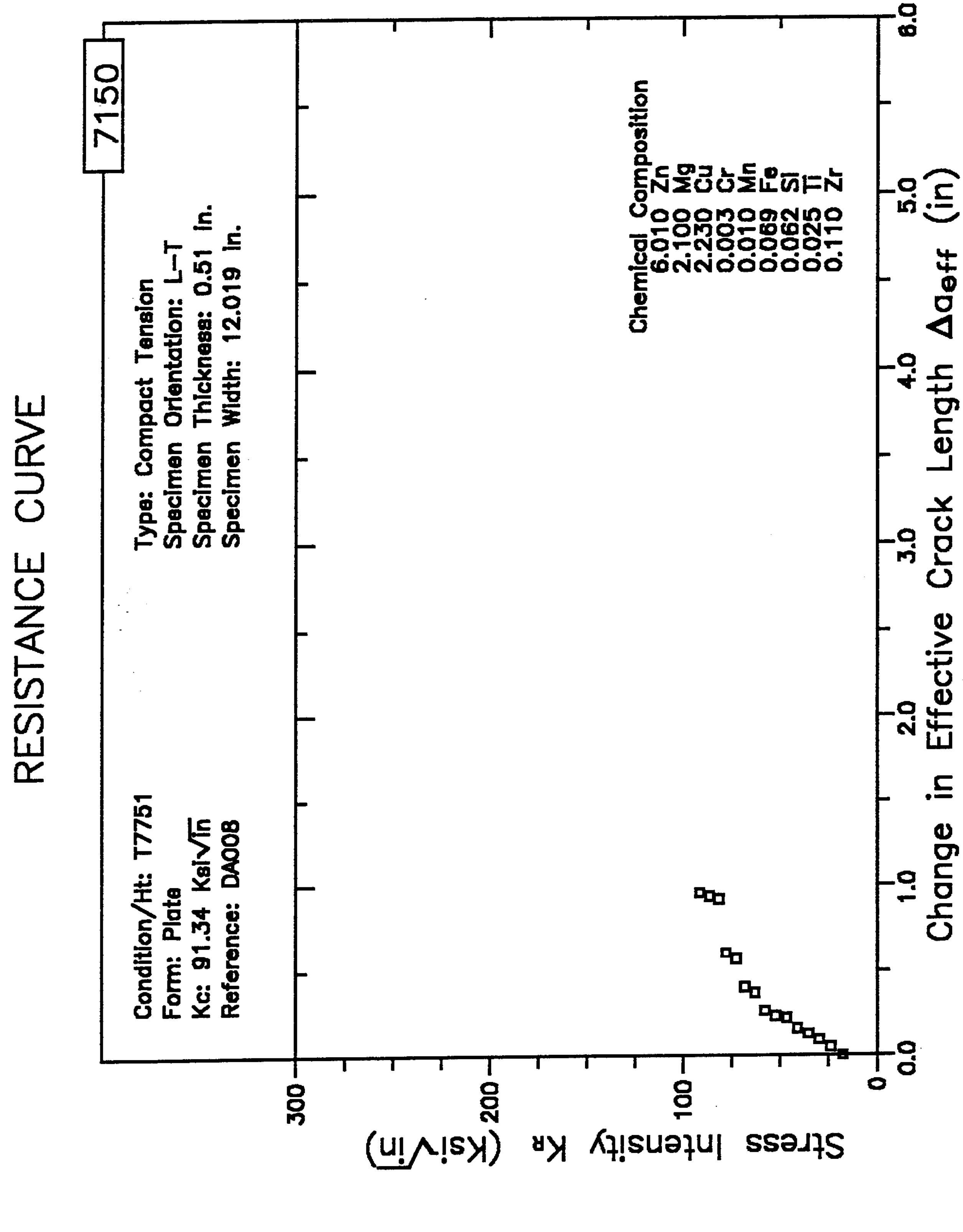


Figure 8.15.2.3.16

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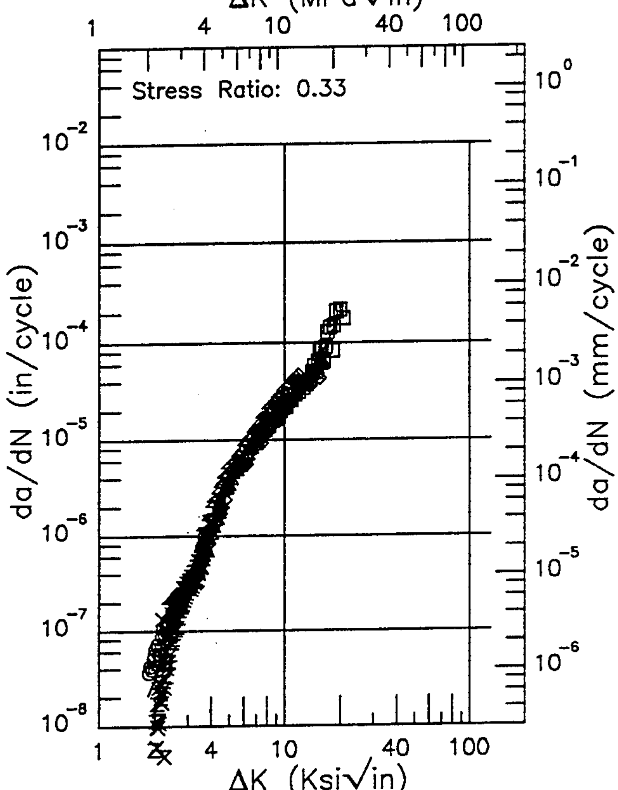
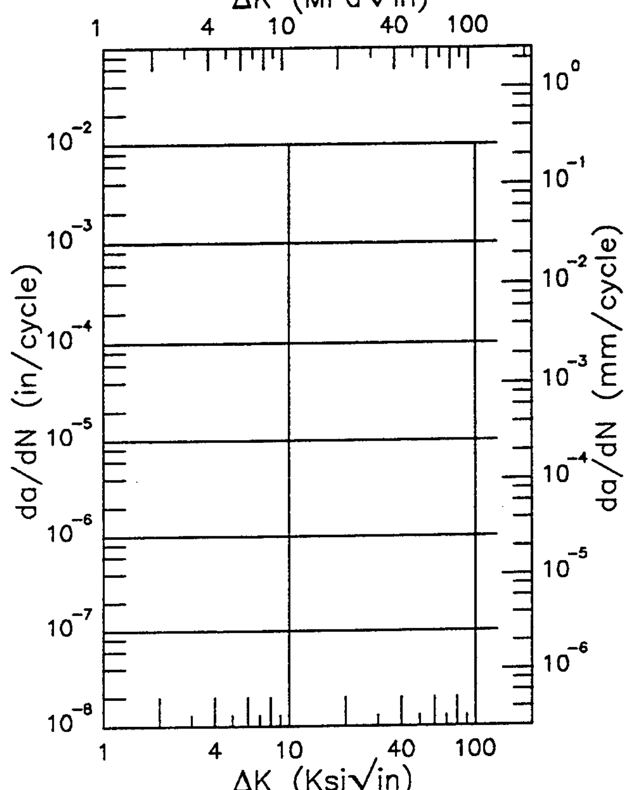
R 7150

Condition/Ht: T651
Form: 1 in. Plate
Specimen Type: WOL
Orientation: L–T
Frequency: 25 Hz
Environment: H.H.A.; RT

Yield Strength:
Ult. Strength:
Specimen Thk: 0.249 – 0.253 in.
Specimen Width: 2.55 – 2.554 in.
Ref: AL014

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
1.85 (min)	0.0208
2.	0.0313
2.5	0.105
3.	0.286
3.5	0.654
4.	1.29
5.	3.64
6.	7.38
7.	11.8
8.	16.3
9.	20.6
10.	24.8
13.	39.9
16.	78.9
20.	199.
20.66 (max)	205.

ΔK (Ksi√in) da/dN (10^{-6}in/cycle)

RMS % Error	Life Prediction Ratio Summary
31.87	0. .5 .8 1.25 2.

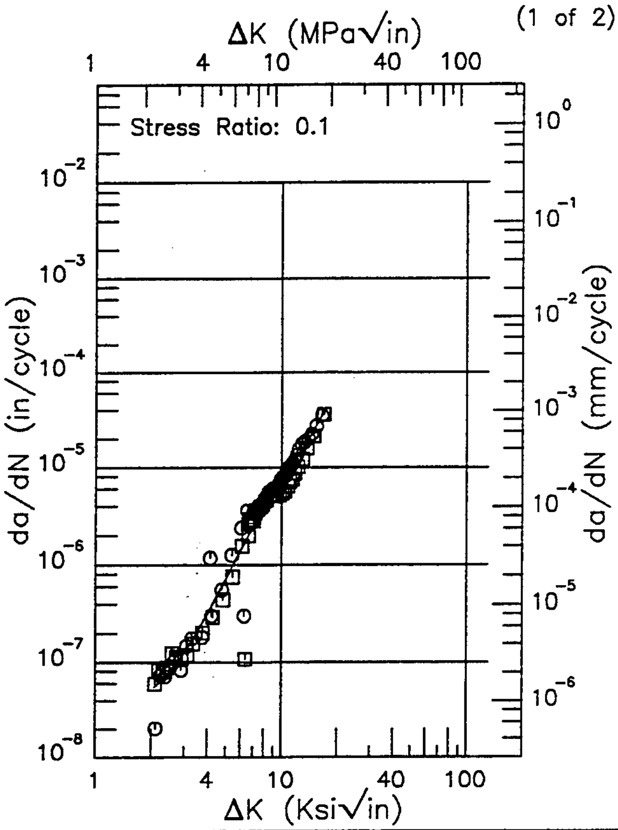
RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

Figure 8.15.3.1.1

Condition/Ht: T7751
Form: 1.12 – 1.25 in. Plate
Specimen Type: CT
Orientation: L–T
Frequency: 5 Hz
Environment: LAB AIR; RT

Yield Strength: 81 – 82.6 ksi
Ult. Strength:
Specimen Thk: 0.499 – 0.5 in.
Specimen Width: 2.002 – 2.003 in.
Ref: DA008

(1 of 2)



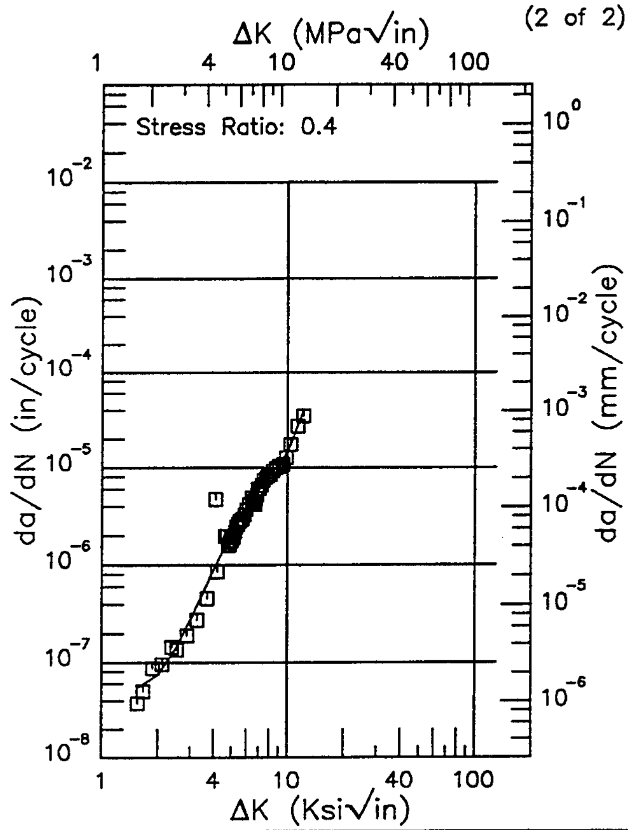
ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)
2.08 (min)	0.0549
2.5	0.0775
3.	0.124
3.5	0.200
4.	0.316
5.	0.712
6.	1.40
7.	2.45
8.	3.86
9.	5.58
10.	7.54
13.	15.3
16.	31.0
16.83 (max)	38.4

RMS % Error: 34.83

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

(2 of 2)



ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)
1.55 (min)	0.0551
1.6	0.0555
2.	0.0747
2.5	0.140
3.	0.274
3.5	0.513
4.	0.889
5.	2.11
6.	3.80
7.	5.82
8.	8.12
9.	10.7
10.	14.4
12.13 (max)	38.2

RMS % Error: 52.58

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

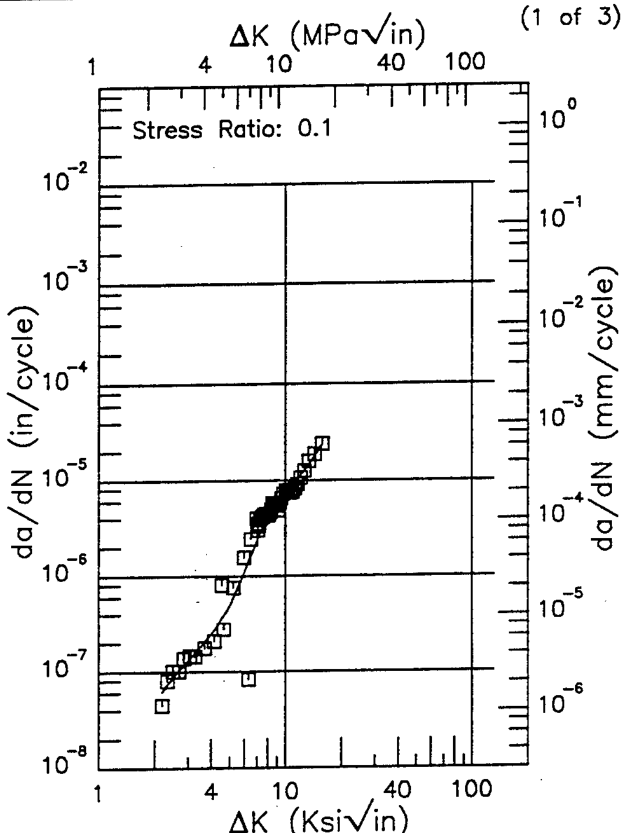
Figure 8.15.3.1.2

R | 7150 |

Condition/Ht: T7751
Form: 1.12 – 1.25 in. Plate
Specimen Type: CT
Orientation: L–T
Frequency: 10 Hz
Environment: LAB AIR; RT

Yield Strength: 81 – 82.2 ksi
Ult. Strength:
Specimen Thk: 0.499 – 0.5 in.
Specimen Width: 2 – 2.002 in.
Ref: DA008

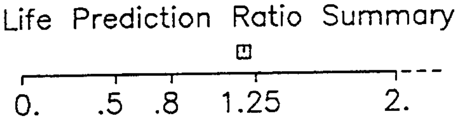
(1 of 3)



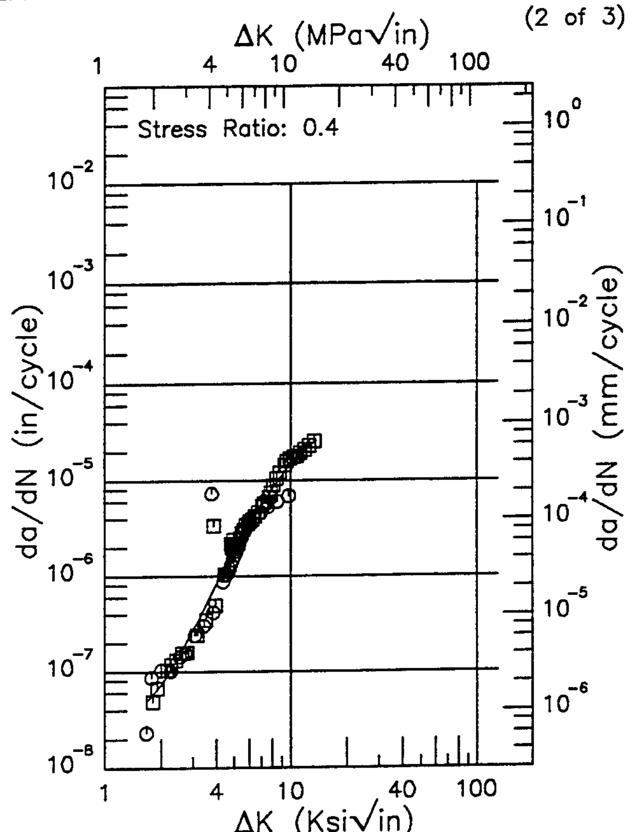
ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
2.19 (min)	0.0618
2.5	0.0877
3.	0.131
3.5	0.181
4.	0.247
5.	0.487
6.	1.07
7.	2.32
8.	4.24
9.	6.15
10.	7.31
13.	13.5
15.70 (max)	23.2

RMS % Error
31.33

Life Prediction Ratio Summary



(2 of 3)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
1.66 (min)	0.0485
2.	0.0720
2.5	0.142
3.	0.275
3.5	0.497
4.	0.833
5.	1.87
6.	3.40
7.	5.47
8.	8.13
9.	11.4
10.	14.9
13.	24.1
13.35 (max)	24.9

RMS % Error
>100.0

Life Prediction Ratio Summary

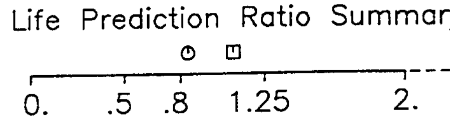
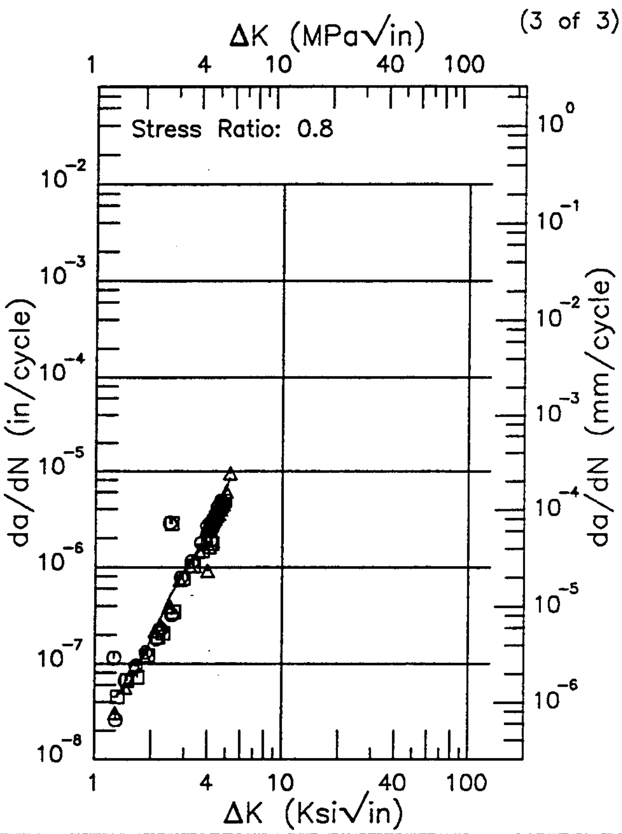


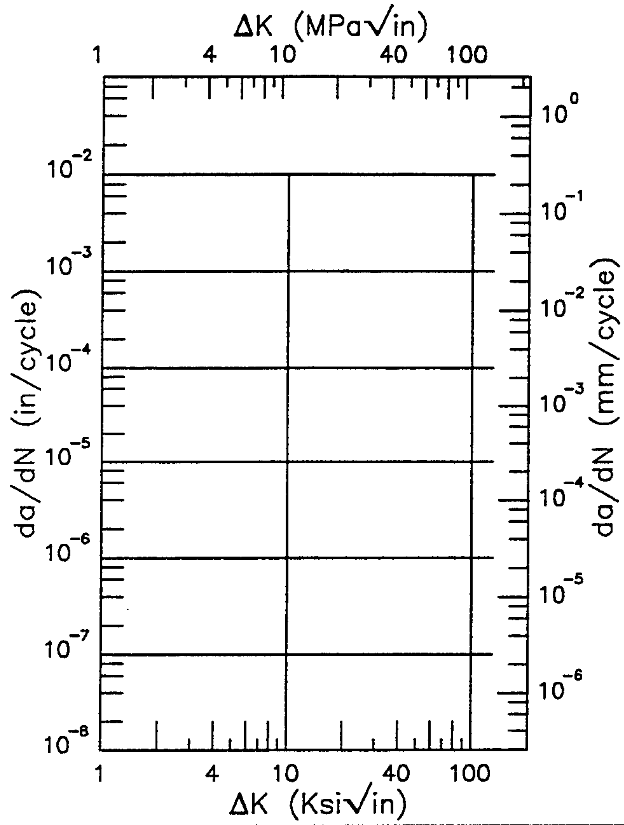
Figure 8.15.3.1.3

Condition/Ht: T7751
Form: 1.12 – 1.25 in. Plate
Specimen Type: CT
Orientation: L–T
Frequency: 10 Hz
Environment: LAB AIR; RT

Yield Strength: 81 – 82.2 ksi
Ult. Strength:
Specimen Thk: 0.499 – 0.5 in.
Specimen Width: 2 – 2.002 in.
Ref: DA008



ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)
1.26 (min)	0.0446
1.3	0.0447
1.6	0.0691
2.	0.181
2.5	0.498
3.	0.895
3.5	1.35
4.	2.11
5.	6.53
5.22 (max)	8.60



ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)

RMS % Error	Life Prediction Ratio Summary
79.56	0. .5 .8 1.25 2.

RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

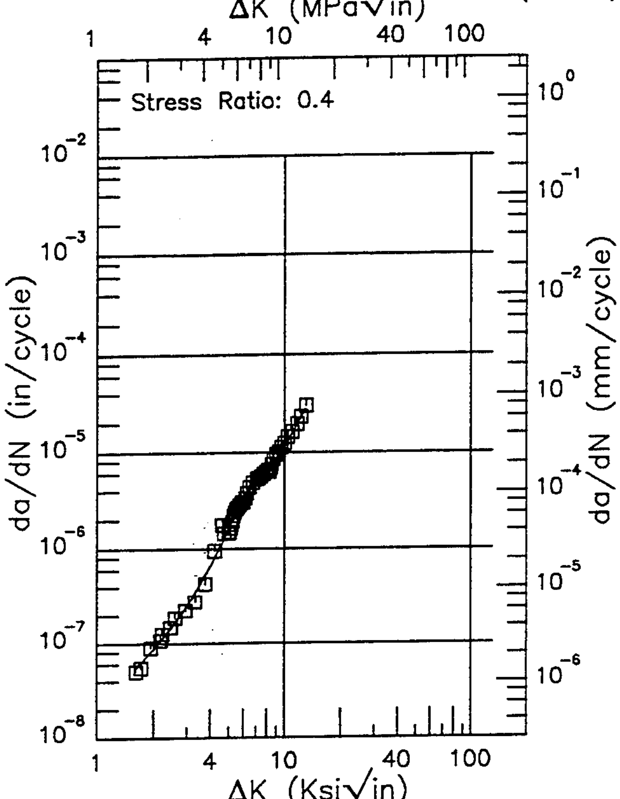
Figure 8.15.3.1.3 (Concluded)

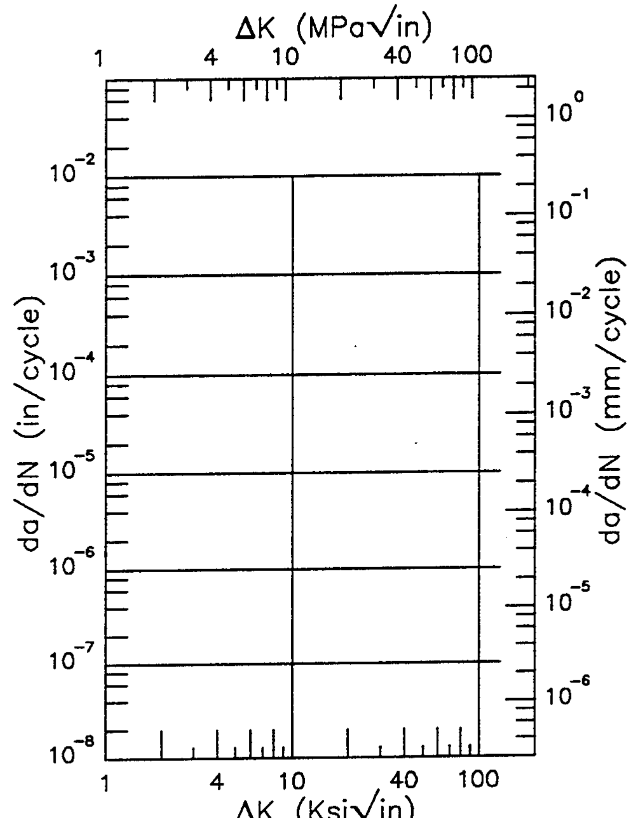
R 7150

Condition/Ht: T7751
Form: 1.25 in. Plate
Specimen Type: CT
Orientation: L–T
Frequency: 15 Hz
Environment: LAB AIR; RT

Yield Strength: 81 ksi
Ult. Strength:
Specimen Thk: 0.5 in.
Specimen Width: 2.002 in.
Ref: DA008

(1 of 1)



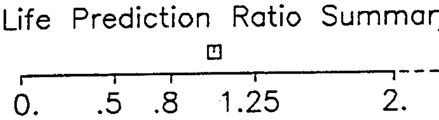


ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
1.61 (min)	0.0539
2.	0.0867
2.5	0.151
3.	0.253
3.5	0.412
4.	0.659
5.	1.60
6.	3.30
7.	5.40
8.	7.12
9.	8.77
10.	11.5
12.93 (max)	27.9

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error
11.61

Life Prediction Ratio Summary



RMS % Error

Life Prediction Ratio Summary

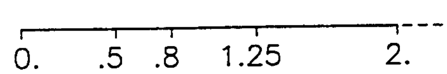
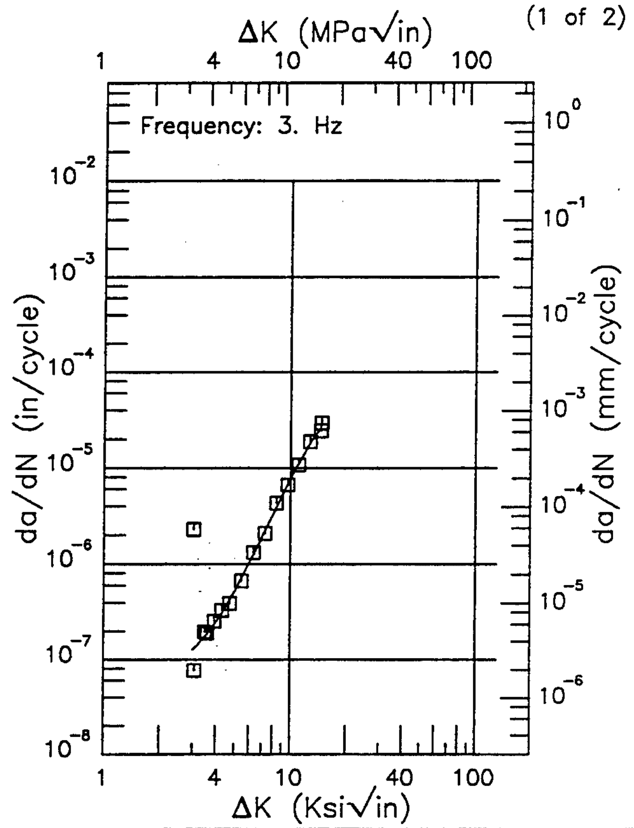


Figure 8.15.3.1.4

Condition/Ht: T7751
Form: 0.25 in. Plate
Specimen Type: CCP (max load specified)
Orientation: L–T
Stress Ratio: 0.1
Environment: LAB AIR; RT

Yield Strength: 81 ksi
Ult. Strength:
Specimen Thk: 0.25 in.
Specimen Width: 24.94 in.
Ref: DA008

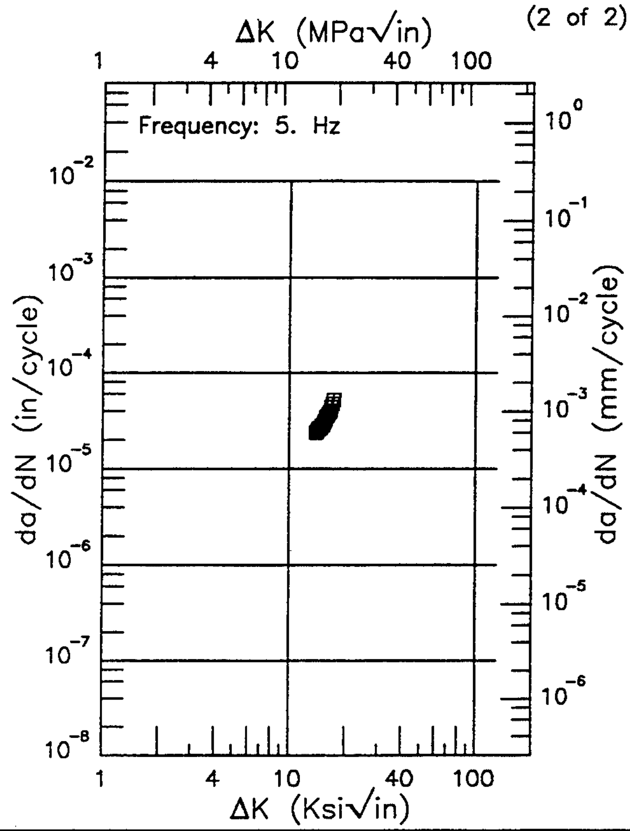
(1 of 2)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
3.02 (min)	0.128
3.5	0.174
4.	0.248
5.	0.518
6.	1.03
7.	1.90
8.	3.26
9.	5.19
10.	7.76
13.	19.0
14.59 (max)	26.2

RMS % Error	Life Prediction Ratio Summary
>100.0	0. .5 .8 1.25 2.

(2 of 2)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
13.90 (min)	23.4
16.	34.9
17.30 (max)	50.8

RMS % Error	Life Prediction Ratio Summary
2.39	0. .5 .8 1.25 2.

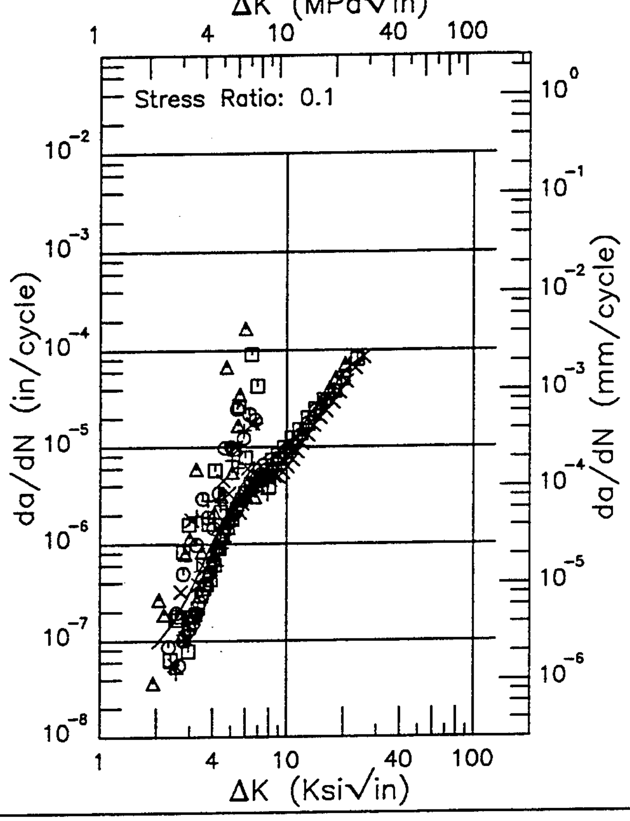
Figure 8.15.3.1.5

R 7150

Condition/Ht: T77511
Form: 0.7 – 1.45 in. Extrusion
Specimen Type: CT
Orientation: L–T
Frequency: 20 Hz
Environment: LAB AIR; RT

Yield Strength: 86.5 – 90.5 ksi
Ult. Strength:
Specimen Thk: 0.493 – 0.498 in.
Specimen Width: 1.997 – 2 in.
Ref: DA008

(1 of 3)

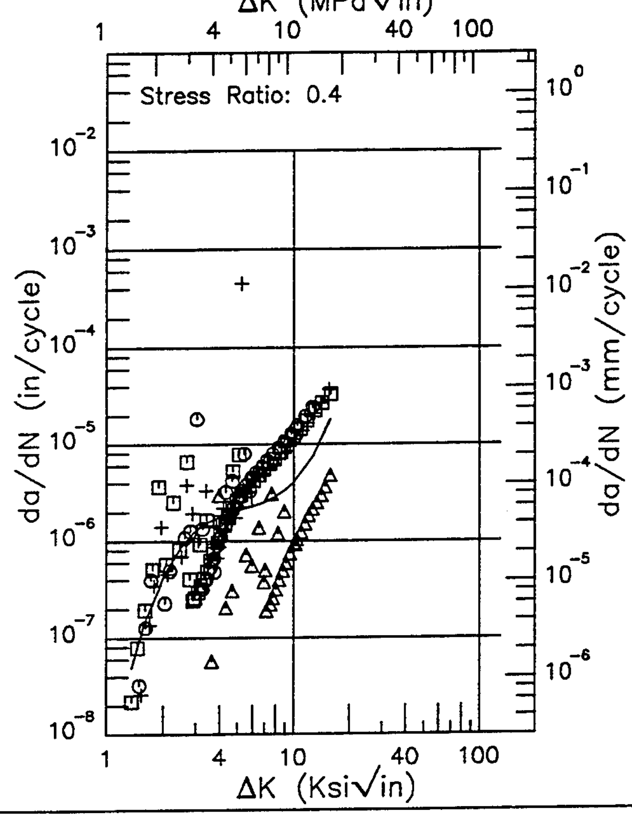


ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
1.91 (min)	0.0859
2.	0.0922
2.5	0.163
3.	0.315
3.5	0.594
4.	1.05
5.	2.61
6.	4.86
7.	7.09
8.	8.50
9.	8.96
10.	9.15
13.	12.5
16.	29.1
20.	60.1
25.	84.1
25.41 (max)	92.2

RMS % Error
>100.0

Life Prediction Ratio Summary
0. .5 .8 1.25 2.

(2 of 3)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
1.36 (min)	0.0497
1.6	0.145
2.	0.423
2.5	0.869
3.	1.27
3.5	1.58
4.	1.80
5.	2.07
6.	2.28
7.	2.53
8.	2.87
9.	3.35
10.	4.02
13.	8.05
15.84 (max)	18.1

RMS % Error
>100.0

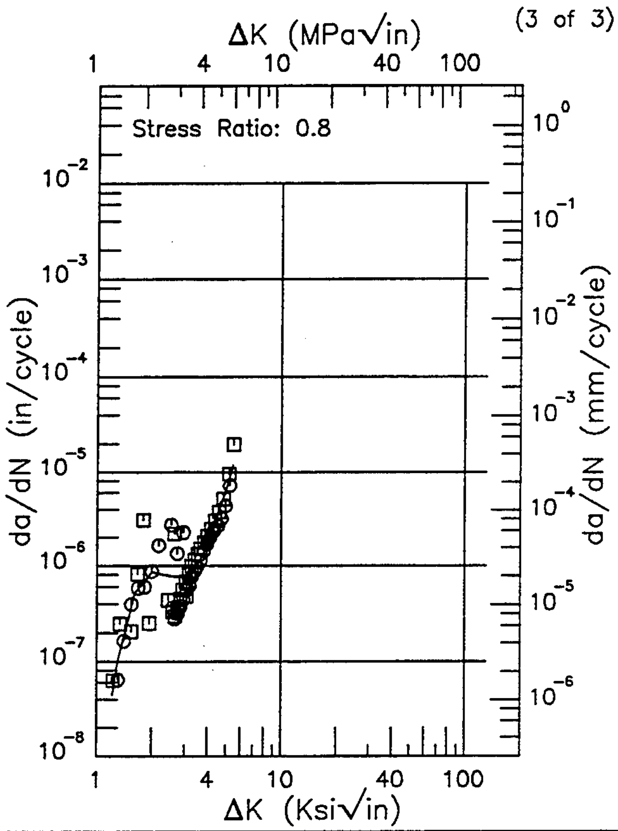
Life Prediction Ratio Summary
0. .5 .8 1.25 2.

Figure 8.15.3.1.6

Condition/Ht: T77511
Form: 0.7 – 1.45 in. Extrusion
Specimen Type: CT
Orientation: L–T
Frequency: 20 Hz
Environment: LAB AIR; RT

Yield Strength: 86.5 – 90.5 ksi
Ult. Strength:
Specimen Thk: 0.493 – 0.498 in.
Specimen Width: 1.997 – 2 in.
Ref: DA008

(3 of 3)

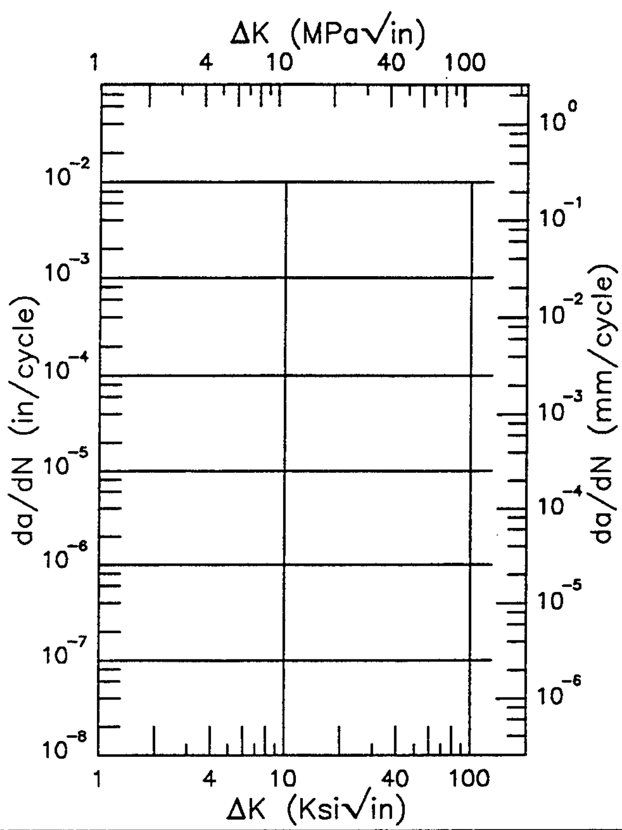


ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
1.22 (min)	0.0441
1.3	0.0985
1.6	0.506
2.	0.855
2.5	0.782
3.	0.742
3.5	0.966
4.	1.67
5.	6.45
5.46 (max)	11.8

RMS % Error 77.68

Life Prediction Ratio Summary

0. .5 .8 1.25 2.



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

Figure 8.15.3.1.6 (Concluded)

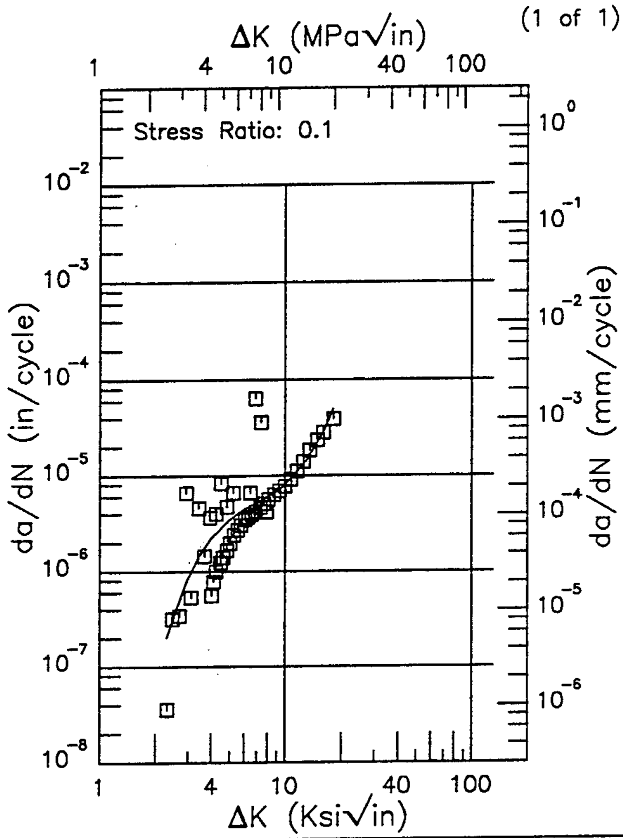
R

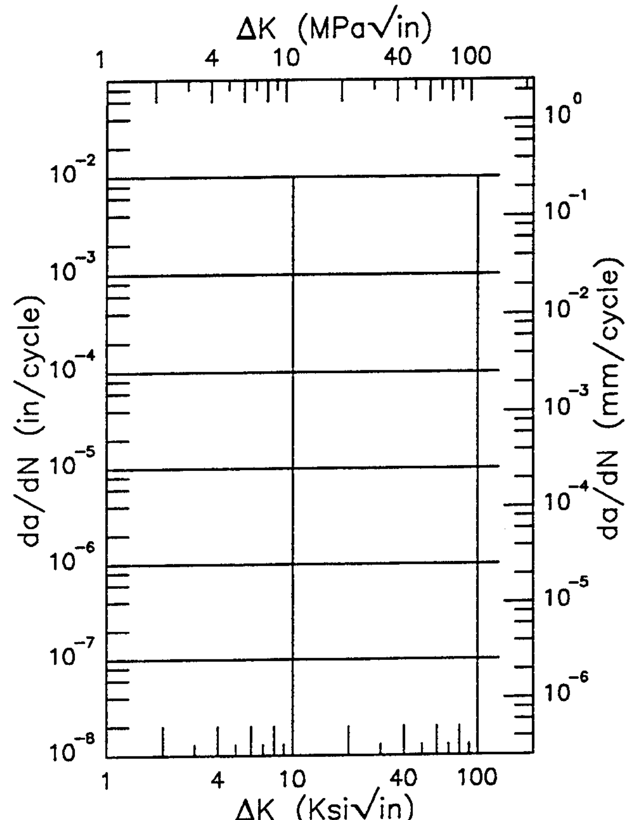
7150

Condition/Ht: T77511
Form: 1.45 in. Extrusion
Specimen Type: CT
Orientation: L–T
Frequency: 25 Hz
Environment: LAB AIR; RT

Yield Strength: 90.5 ksi
Ult. Strength:
Specimen Thk: 0.493 in.
Specimen Width: 2.002 in.
Ref: DA008

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
2.30 (min)	0.201
2.5	0.336
3.	0.850
3.5	1.52
4.	2.22
5.	3.46
6.	4.40
7.	5.20
8.	6.00
9.	6.92
10.	8.07
13.	14.2
16.	29.0
18.03 (max)	50.4

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error	Life Prediction Ratio Summary
>100.0	0. .5 .8 1.25 2.

RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

Figure 8.15.3.1.7

TABLE 8.16.1.1

MEAN PLANE STRAIN FRACTURE TOUGHNESS FOR ALUMINUM 7000/8000 SERIES ALLOY 7175 AT ROOM TEMPERATURE

Product Form	Condition/Heat Treatment	K_{Ic} ($ksi\sqrt{in}$)								
		Specimen Orientation								
		L-T			T-L			S-L		
		Mean K_{Ic}	Std Dev	n	Mean K_{Ic}	Std Dev	n	Mean K_{Ic}	Std Dev	n
Forging	T66	---	---	---	23.2	3.1	2	20.8	1.1	7
	T73	---	---	---	---	---	---	27.1	1.2	4
	T7352	---	---	---	24.5	0.5	2	---	---	---
	T736	31.2	3.8	4	26.4	3.6	10	25.3	2.1	23
	T73652	32.7	8.	2	---	---	---	---	---	---
Extrusion	T73511	32.8	6.5	17	27.	4.9	12	---	---	---
	T76511	32.9	3.5	48	22.6	2.5	36	20.9	1.3	3

TABLE 8.16.1.2.1

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF STRESS INTENSITY FACTOR ΔK 7175 AT ROOM TEMPERATURE

ORIENTATION: L-T **ENVIRONMENT: Dry Air**

CONDITION/ HEAT TREATMENT	PRODUCT FORM	R	FREQ (Hz)	*FCGR* (10^{-6} *in/cycle*)					
				ΔK Level (*Ksi√in*)					
				2.5	5.0	10.0	20.0	50.0	100.0
T7354	FORGING	0.1	6		1.15	10.68	83.04		
T736	FORGING	0.1	6		1.1	11.84			
		0.3	6		3.76	19.57			
		0.33	5.2			15.96			
T76511	EXTRUSION	0.1	20		1.45	12.71			
		0.1	20		1.3	12.64			
		0.1	30	0.15	1.11				

TABLE 8.16.1.2.2

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF STRESS INTENSITY FACTOR ΔK 7175 AT ROOM TEMPERATURE

ORIENTATION: L-T **ENVIRONMENT: F.C.S.**

CONDITION/ HEAT TREATMENT	PRODUCT FORM	R	FREQ (Hz)	*FCGR* (10^{-6} *in/cycle*)					
				ΔK *Level* (*Ksi*√*in*)					
				2.5	5.0	10.0	20.0	50.0	100.0
T73652	FORGING	0.08	1		1.32	10.79			

TABLE 8.16.1.2.3

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF STRESS INTENSITY FACTOR ΔK
7175 AT ROOM TEMPERATURE

ORIENTATION: L-T **ENVIRONMENT: H.H.A.**

CONDITION/ HEAT TREATMENT	PRODUCT FORM	R	FREQ (Hz)	*FCGR* (10^{-6} *in/cycle*) ΔK *Level* (*Ksi*√*in*)					
				2.5	5.0	10.0	20.0	50.0	100.0
T736	FORGING	0.1	1		2.03	11.22	55.07		
		0.3	1		1.77	15.31			
		0.33	5.2			19.65			
		0.5	1		2.97	17.29			

TABLE 8.16.1.2.4

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF STRESS INTENSITY FACTOR ΔK 7175 AT ROOM TEMPERATURE

ORIENTATION: L-T **ENVIRONMENT: JP-4 Jet Fuel**

CONDITION/ HEAT TREATMENT	PRODUCT FORM	R	FREQ (Hz)	*FCGR* (10^{-6} *in/cycle*)					
				ΔK *Level* ($Ksi\sqrt{in}$)					
				2.5	5.0	10.0	20.0	50.0	100.0
T73652	FORGING	0.02	1-20		0.44	6.67	47.58		
T74	FORGING	0.02	1-20		0.36	3.83	35.42		

TABLE 8.16.1.2.5

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF STRESS INTENSITY FACTOR ΔK 7175 AT ROOM TEMPERATURE

ORIENTATION: L-T **ENVIRONMENT: L.H.A.**

CONDITION/ HEAT TREATMENT	PRODUCT FORM	R	FREQ (Hz)	*FCGR* (10^{-6} *in/cycle*)					
				ΔK *Level* (*Ksi√in*)					
				2.5	5.0	10.0	20.0	50.0	100.0
T73652	FORGING	0.08	0.1			10.3			
		0.08	1		0.43	9.41	51.46		
		0.08	6			5.67			
		0.08	6			8.49			
		0.08	6			5.92	36.84		
		0.3	6		0.53	10.12			

TABLE 8.16.1.2.6

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF STRESS INTENSITY FACTOR ΔK 7175 AT ROOM TEMPERATURE

ORIENTATION: L-T **ENVIRONMENT: Lab Air**

CONDITION/ HEAT TREATMENT	PRODUCT FORM	R	FREQ (Hz)	FCGR (10^{-6} in/cycle) ΔK Level (Ksi√in) 2.5	5.0	10.0	20.0	50.0	100.0
T736	FORGING	0.02	10			10.52	57.48		
T73652	FORGING	0.02	1-15	0.12					
		0.02	1-18	0.12	0.76	7.48			
		0.02	0.1-20			8.39	37.54		
T74	FORGING	0.02	0.08-10			3.44	38.3		
		0.02	0.1-20		0.51	8.78	33.73		
		0.02			0.16	2.43	35.19		
		0.02			0.31	7.65	46.92		
		0.1	10			9.23	64.01		
		0.1	10		1.5	9.96			
		0.1	25	0.13	1.77				
		0.5	10		2.68	16.24			
		0.5	20		2.29	16.19			
		0.5	25	0.14					
		0.8	10		4.66				
		0.8	20	0.2	3.05				
	UNSPECIFIED	0.1	10			4.07	50.49		

TABLE 8.16.1.2.7

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF STRESS INTENSITY FACTOR ΔK
7175 AT ROOM TEMPERATURE

ORIENTATION: L-T **ENVIRONMENT: S.S.W.**

CONDITION/ HEAT TREATMENT	PRODUCT FORM	R	FREQ (Hz)	*FCGR* (10^{-6} *in/cycle*)					
				ΔK *Level* (*Ksi*$\sqrt{in}$)					
				2.5	5.0	10.0	20.0	50.0	100.0
T73652	FORGING	0.02	0.1-20		1	11.65	66.39		
T74	FORGING	0.02	0.1-20		1	11.52	66.1		

TABLE 8.16.1.2.8

**FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF STRESS INTENSITY FACTOR ΔK
7175 AT ROOM TEMPERATURE**

ORIENTATION: L-T **ENVIRONMENT: S.T.W.**

CONDITION/ HEAT TREATMENT	PRODUCT FORM	R	FREQ (Hz)	*FCGR* (10^{-6} *in/cycle*)					
				ΔK *Level* (*Ksi*$\sqrt{in}$)					
				2.5	5.0	10.0	20.0	50.0	100.0
T7354	FORGING	0.1	1		0.63	27.02			
T736	FORGING	0.1	1		1.57				
		0.5	1	0.33	6.28	56.78			
T73652	FORGING	0.3	1		3.24	29.39			
		0.5	1			33.28			

TABLE 8.16.1.2.9

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF STRESS INTENSITY FACTOR ΔK 7175 AT ROOM TEMPERATURE

ORIENTATION: L-T **ENVIRONMENT: Salt Fog**

CONDITION/ HEAT TREATMENT	PRODUCT FORM	R	FREQ (Hz)	*FCGR* (10^{-6} *in/cycle*)					
				ΔK *Level* ($Ksi\sqrt{in}$)					
				2.5	5.0	10.0	20.0	50.0	100.0
T736	FORGING	0.33	5.2			41.76			

TABLE 8.16.1.2.10

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF STRESS INTENSITY FACTOR ΔK 7175 AT ROOM TEMPERATURE

ORIENTATION: T-L **ENVIRONMENT: Dry Air**

CONDITION/ HEAT TREATMENT	PRODUCT FORM	R	FREQ (Hz)	*FCGR* (10^{-6} *in/cycle*) *ΔK Level* (*Ksi√in*)					
				2.5	5.0	10.0	20.0	50.0	100.0
T736	FORGING	0.33	5.2			16.23			
		0.33	18.3			12.47			

TABLE 8.16.1.2.11

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF STRESS INTENSITY FACTOR ΔK 7175 AT ROOM TEMPERATURE

ORIENTATION: T-L **ENVIRONMENT: H.H.A.**

CONDITION/ HEAT TREATMENT	PRODUCT FORM	R	FREQ (Hz)	*FCGR* (10^{-6} *in/cycle*)					
				ΔK Level ($Ksi\sqrt{in}$)					
				2.5	5.0	10.0	20.0	50.0	100.0
T736	FORGING	0.33	5.2			18.22			
		0.33	18.3			23.76			

TABLE 8.16.1.2.12

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF STRESS INTENSITY FACTOR ΔK 7175 AT ROOM TEMPERATURE

ORIENTATION: T-L **ENVIRONMENT: JP-4 Jet Fuel**

CONDITION/ HEAT TREATMENT	PRODUCT FORM	R	FREQ (Hz)	*FCGR* (10^{-6} *in/cycle*)					
				Δ*K Level* (*Ksi√in*)					
				2.5	5.0	10.0	20.0	50.0	100.0
T73652	FORGING	0.02	1-20		0.67	5.18	74.87		
T74	FORGING	0.02	1-20		0.68	5.46	79.05		

TABLE 8.16.1.2.13

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF STRESS INTENSITY FACTOR ΔK 7175 AT ROOM TEMPERATURE

ORIENTATION: T-L **ENVIRONMENT: L.H.A.**

CONDITION/ HEAT TREATMENT	PRODUCT FORM	R	FREQ (Hz)	*FCGR* (10^{-6} *in/cycle*) ΔK Level (Ksi√in) 2.5	5.0	10.0	20.0	50.0	100.0
T73652	FORGING	0.08	6			1.95			
		0.08	6			3.97			

TABLE 8.16.1.2.14

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF STRESS INTENSITY FACTOR ΔK 7175 AT ROOM TEMPERATURE

ORIENTATION: T-L **ENVIRONMENT: Lab Air**

CONDITION/ HEAT TREATMENT	PRODUCT FORM	R	FREQ (Hz)	*FCGR* (10^{-6} *in/cycle*)					
				ΔK *Level* ($Ksi\sqrt{in}$)					
				2.5	5.0	10.0	20.0	50.0	100.0
T73652	FORGING	0.02	1-20			10.1	50.27		
T74	FORGING	0.02	1-20		0.41	10.27	48.92		

TABLE 8.16.1.2.15

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF STRESS INTENSITY FACTOR ΔK 7175 AT ROOM TEMPERATURE

ORIENTATION: T-L **ENVIRONMENT: S.S.W.**

CONDITION/ HEAT TREATMENT	PRODUCT FORM	R	FREQ (Hz)	*FCGR* (10^{-6} *in/cycle*) ΔK *Level* (*Ksi√in*) 2.5	5.0	10.0	20.0	50.0	100.0
T73652	FORGING	0.02	1-20		0.97	9.61	76.62		
T74	FORGING	0.02	0.1-20		0.57	9.17	72.11		

TABLE 8.16.1.2.16

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF STRESS INTENSITY FACTOR ΔK 7175 AT ROOM TEMPERATURE

ORIENTATION: T-L **ENVIRONMENT: S.T.W.**

CONDITION/ HEAT TREATMENT	PRODUCT FORM	R	FREQ (Hz)	*FCGR* (10^{-6} *in/cycle*)					
				ΔK *Level* (*Ksi*$\sqrt{in}$)					
				2.5	5.0	10.0	20.0	50.0	100.0
T7354	FORGING	0.1	1		1.15	36.01			

TABLE 8.16.1.2.17

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF STRESS INTENSITY FACTOR ΔK 7175 AT ROOM TEMPERATURE

ORIENTATION: T-L **ENVIRONMENT: Salt Fog**

CONDITION/ HEAT TREATMENT	PRODUCT FORM	R	FREQ (Hz)	*FCGR* (10^{-6} *in/cycle*) *ΔK Level* (*Ksi√in*)					
				2.5	5.0	10.0	20.0	50.0	100.0
T736	FORGING	0.33	5.2			31.47			
		0.33	18.3			21.63			

TABLE 8.16.1.2.18

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF STRESS INTENSITY FACTOR ΔK 7175 AT ROOM TEMPERATURE

ORIENTATION: S-T **ENVIRONMENT: Dry Air**

CONDITION/ HEAT TREATMENT	PRODUCT FORM	R	FREQ (Hz)	*FCGR* (10^{-6} *in/cycle*)					
				ΔK Level (*Ksi√in*)					
				2.5	5.0	10.0	20.0	50.0	100.0
T736	FORGING	0.33	18.3			11.92			

TABLE 8.16.1.2.19

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF STRESS INTENSITY FACTOR ΔK 7175 AT ROOM TEMPERATURE

ORIENTATION: S-T **ENVIRONMENT: H.H.A.**

CONDITION/ HEAT TREATMENT	PRODUCT FORM	R	FREQ (Hz)	FCGR (10^{-6} in/cycle) ΔK Level (Ksi√in) 2.5	5.0	10.0	20.0	50.0	100.0
T736	FORGING	0.33	18.3			17.14			

TABLE 8.16.2.1

ALUMINUM 7175 K_{Ic}

CONDITION	PRODUCT FORM	PRODUCT THICK (in.)	TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN WIDTH (in.) W	SPECIMEN THICK (in.) B	SPECIMEN DESIGN	CRACK LENGTH (in.) A	$2.5 * (K_{Ic}/TYS)^2$ (in.)	K_{Ic} K_{Ic} (Ksi * $\sqrt{in.}$)	K_{Ic} K_{Ic} MEAN	K_{Ic} STAN DEV	DATE	REFER
T66	Forging	1.00	R.T.	L-T	82.4	1.000	0.500	CT	0.541	0.49	36.30	---	---	1973	86213
T66	Forging	1.00	R.T.	T-L	80.2	1.000	0.499	CT	0.551	0.25	25.40	23.2	3.1	1973	86213
		1.00			80.2	1.000	0.499	CT	0.541	0.17	21.00			1973	86213
T66	Forging	1.00	R.T.	S-L	70.4	1.000	0.499	CT	0.535	0.25	22.30	20.8	1.1	1973	86213
		1.00			70.4	1.000	0.500	CT	0.525	0.23	21.50			1973	86213
		1.00			70.4	1.000	0.499	CT	0.523	0.19	19.40			1973	86213
		1.00			73.0	1.000	0.500	CT	0.539	0.20	20.70			1973	86213
		1.00			73.0	1.000	0.500	CT	0.533	0.18	19.40			1973	86213
		1.00			73.0	1.000	0.499	CT	0.528	0.23	21.90			1973	86213
		1.00			73.0	1.000	0.500	CT	0.503	0.20	20.60			1973	86213
T66	Forging	0.50	89	L-T	80.4	1.000	0.500	CT	0.538	0.47	34.90	34.7	0.3	1973	86213
		0.50			80.4	1.000	0.501	CT	0.541	0.46	34.50			1973	86213
T66	Forging	0.50	89	T-L	82.2	1.000	0.500	CT	0.531	0.24	25.70	---	---	1973	86213
T73	Forging	8.50	R.T.	T-L	47.7	1.500	0.750	CT	0.775	0.52	21.80	---	---	1973	86213
T73	Forging	1.00	R.T.	S-L	64.9	1.000	0.500	CT	0.517	0.46	27.90	27.1	1.2	1973	86213
		1.00			64.9	1.000	0.500	CT	0.520	0.41	26.40			1973	86213
		1.00			64.9	1.000	0.500	CT	0.480	0.40	25.80			1973	86213
		1.00			64.9	1.000	0.500	CT	0.525	0.47	28.20			1973	86213
T73	Extrusion	4.50	82	L-C	62.2	2.000	1.002	CT	1.052	0.87	36.60	---	---	1973	86213
T73511	Extrusion	1.30	-65	L-T	62.4	2.000	1.017	CT	1.040	0.59	30.50	34.5	4.5	1977	LG001
		1.30			63.5	2.497	1.250	CT	1.320	0.58	30.79			1977	LG001
		1.30			65.6	2.997	1.500	CT	1.562	0.55	30.90			1977	LG001
		1.30			65.8	2.501	1.250	CT	1.360	1.00	41.70			1977	LG001

TABLE 8.16.2.1 (CONTINUED)

ALUMINUM 7175 K_{Ic}

CONDITION	PRODUCT FORM	PRODUCT THICK (in.)	TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN WIDTH (in.) W	SPECIMEN THICK (in.) B	SPECIMEN DESIGN	CRACK LENGTH (in.) A	$2.5 \cdot (K_{Ic}/TYS)^2$ (in.)	K_{Ic} K_{Ic} (Ksi $\cdot \sqrt{in.}$)	K_{Ic} MEAN	K_{Ic} STAN DEV	DATE	REFER
		1.30			67.2	1.999	1.020	CT	1.084	0.85	39.40			1977	LG001
T73511 Cont'd	Extrusion Cont'd	1.30	-65 Cont'd	L-T Cont'd	67.6	2.994	1.503	CT	1.572	0.65	34.70	Cont'd	Cont'd	1977	LG001
		1.30			67.6	1.498	0.750	CT	0.749	0.60	33.20			1977	LG001
		1.30			60.9	2.501	1.250	CT	1.306	0.45	26.10			1977	LG001
		1.30			60.9	3.000	1.500	CT	1.520	0.25	19.29			1977	LG001
		1.30			60.9	2.000	1.013	CT	1.147	0.45	25.90			1977	LG001
		1.30			60.9	3.003	1.499	CT	1.504	0.28	20.50			1977	LG001
T73511	Extrusion	1.30	-65	T-L	64.0	1.501	0.752	CT	0.765	0.59	31.20	26.7	4.4	1977	LG001
		1.30			64.0	2.501	1.250	CT	1.353	0.49	28.60			1977	LG001
		1.30			64.0	1.990	1.008	CT	1.118	0.56	30.50			1977	LG001
		1.30			65.6	2.501	1.251	CT	1.325	0.41	26.60			1977	LG001
		1.30			65.6	1.499	0.751	CT	0.763	0.57	31.40			1977	LG001
		1.80			62.4	3.000	1.500	CT	---	0.87	36.90			1981	LG003
		1.30			66.1	2.999	1.500	CT	1.532	1.28	47.40			1977	LG001
		1.30			66.7	2.999	1.500	CT	1.516	0.84	38.80			1977	LG001
		1.30			66.9	2.495	1.250	CT	1.292	0.51	30.40			1977	LG001
		1.30			67.1	2.003	1.001	CT	1.045	0.51	30.40			1977	LG001
T73511	Extrusion	1.30	R.T.	L-T	67.1	1.503	0.749	CT	0.770	0.47	29.10	32.8	6.5	1977	LG001
		1.30			67.1	2.002	1.000	CT	1.019	0.50	30.29			1977	LG001
		1.30			67.1	1.503	0.746	CT	0.765	0.53	30.90			1977	LG001
		1.30			68.0	1.500	0.752	CT	0.786	0.33	24.90			1977	LG001
		1.30			68.0	2.000	1.000	CT	1.088	0.47	29.60			1977	LG001

TABLE 8.16.2.1 (CONTINUED)

ALUMINUM 7175 K_{Ic}

CONDITION	PRODUCT		TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN			CRACK LENGTH (in.) A	2.5 * $(K_{Ic}/TYS)^2$ (in.)	K_{Ic}			DATE	REFER
	FORM	THICK (in.)				WIDTH (in.) W	THICK (in.) B	DESIGN			K_{Ic} (Ksi • √in.)	K_{Ic} MEAN	STAN DEV		
T73511 Cont'd	Extrusion Cont'd	1.30	R.T. Cont'd	L-T Cont'd	68.0	2.400	1.200	CT	1.288	0.45	29.00	Cont'd	Cont'd	1977	LG001
		1.30			68.0	1.000	0.501	CT	0.534	0.29	23.40			1977	LG001
		1.30			68.3	2.505	1.250	CT	1.310	0.72	36.90			1977	LG001
		1.30			68.7	2.505	1.250	CT	1.355	0.40	27.70			1977	LG001
		1.30			68.7	3.000	1.505	CT	1.580	0.87	40.70			1977	LG001
		1.30			68.8	3.000	1.505	CT	1.550	0.91	41.70			1977	LG001
		1.30			70.6	3.001	1.500	CT	1.521	0.44	29.79			1977	LG001
T73511	Extrusion	1.30	R.T.	T-L	62.6	2.501	1,250	CT	1.345	0.57	29.90	27.0	4.9	1977	LG001
		1.80			63.2	3.000	1.500	CT	---	0.79	35.50			1981	LG003
		1.30			63.7	1.505	0.749	CT	0.825	0.29	21.79			1977	LG001
		1.30			63.7	3.000	1.499	CT	1.533	0.27	21.00			1977	LG001
		1.30			64.1	1.500	0.751	CT	0.807	0.50	28.70			1977	LG001
		1.30			64.7	1.998	1.012	CT	1.063	0.48	28.40			1977	LG001
		1.30			64.8	1.000	0.501	CT	0.533	0.40	26.10			1977	LG001
		1.30			65.0	2.500	1.251	CT	1.203	0.39	25.70			1977	LG001
		1.30			65.0	2.500	1.243	CT	1.294	0.31	22.90			1977	LG001
		1.30			67.1	2.000	1.005	CT	1.047	0.23	20.50			1977	LG001
		1.30			68.0	2.000	1.000	CT	1.088	0.59	33.20			1977	LG001
		1.30			68.0	2.400	1.200	CT	1.290	0.49	30.40			1977	LG001
T7352	Forging	0.75	R.T.	T-L	53.9	1.500	0.622	NB	0.754	0.53	24.80	24.5	0.5	1973	86213
		0.75			53.9	1.500	0.622	NB	0.729	0.50	24.10			1973	86213
T7352	Forging	2.75	82	L-S	60.8	2.000	0.998	CT	1.023	0.96	37.70	---	---	1973	86213

TABLE 8.16.2.1 (CONTINUED)

ALUMINUM 7175 K_{Ic}

CONDITION	PRODUCT		TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN			CRACK LENGTH (in.) A	2.5 * $(K_Q/TYS)^2$ (in.)	K_{Ic}			DATE	REFER
	FORM	THICK (in.)				WIDTH (in.) W	THICK (in.) B	DESIGN			K_Q (Ksi * $\sqrt{in.}$)	K_Q MEAN	STAN DEV		
T7352	Forging	3.00	86	T-L	52.2	1.990	1.000	CT	1.015	0.87	30.80	30.7	0.1	1973	86213
		3.00			52.2	1.990	1.000	CT	1.045	0.86	30.60			1973	86213
T7352	Forging	3.00	86	S-L	55.8	1.990	0.999	CT	1.018	0.47	24.20	24.5	0.4	1973	86213
		3.00			55.8	1.990	1.000	CT	1.015	0.49	24.80			1973	86213
T736	Forging	2.50	-65	S-T	66.6	2.000	1.000	CT	1.000	0.38	26.00	26.3	0.4	1972	83058
		2.50			66.6	2.000	1.000	CT	1.000	0.40	26.70			1972	83058
		2.50			66.6	2.000	1.000	CT	1.000	0.38	26.10			1972	83058
T736	Forging	2.50	0	S-T	65.9	2.000	1.000	CT	1.000	0.40	26.30	26.6	0.4	1972	83058
		2.50			65.9	2.000	1.000	CT	1.000	0.40	26.40			1972	83058
		2.50			65.9	2.000	1.000	CT	1.000	0.42	27.10			1972	83058
T736	Forging	3.00	R.T.	L-S	63.9	2.000	1.000	CT	1.073	0.86	37.40	32.1	7.5	1973	86213
		3.00			65.7	2.000	1.000	CT	1.012	0.42	26.80			1973	86213
T736	Forging	2.00	R.T.	L-T	68.0	1.500	0.749	CT	0.804	0.41	27.40	31.2	3.8	1973	86213
		...			68.5	1.400	0.698	CT	0.740	0.67	36.40			1973	85880
		3.00			69.0	1.500	0.750	CT	0.825	0.46	29.60			1973	86213
		1.00			76.9	1.000	0.500	CT	0.480	0.42	31.50			1972	84368
T736	Forging	3.00	R.T.	T-L	59.7	2.000	1.000	CT	1.025	0.31	21.10	26.4	3.6	1973	86213
		4.00			59.9	2.000	1.000	CT	1.090	0.51	27.10			1972	84368
		4.00			59.9	2.000	1.000	CT	1.070	0.50	26.90			1972	84368
		3.00			65.7	2.000	1.000	CT	1.100	0.39	26.10			1972	84368
		3.00			65.7	2.000	0.998	CT	1.086	0.35	24.70			1973	86213
		3.00			65.7	2.000	1.000	CT	1.090	0.35	24.70			1972	84368
		3.00			65.7	2.000	0.998	CT	1.104	0.39	26.10			1973	86213

TABLE 8.16.2.1 (CONTINUED)

ALUMINUM 7175 K_{Ic}

CONDITION	PRODUCT FORM	PRODUCT THICK (in.)	TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN WIDTH (in.) W	SPECIMEN THICK (in.) B	SPECIMEN DESIGN	CRACK LENGTH (in.) A	$2.5 \cdot (K_{Ic}/TYS)^2$ (in.)	K_{Ic} (Ksi $\cdot \sqrt{in.}$)	K_{Ic} MEAN	STAN DEV	DATE	REFER
T736 Cont'd	Forging Cont'd	2.50	R.T. Cont'd	T-L Cont'd	66.3	2.000	1.000	CT	1.000	0.29	22.70	Cont'd	Cont'd	1972	83058
		1.00			73.0	1.000	0.500	CT	0.526	0.47	31.50			1973	86213
		---			75.4	1.000	0.500	CT	0.500	0.48	33.10			1972	83058
T736	Forging	2.50	R.T.	S-T	64.9	2.000	1.000	CT	1.000	0.67	33.50	29.7	3.6	1972	83058
		2.50			64.9	2.000	1.000	CT	1.000	0.65	33.10			1972	83058
		2.50			64.9	2.000	1.000	CT	1.000	0.50	29.10			1972	83058
		---			65.5	1.000	0.500	CT	0.500	0.45	27.70			1972	83058
		---			65.5	1.000	0.500	CT	0.500	0.37	25.20			1972	83058
T736	Forging	4.00	R.T.	S-L	61.4	2.000	1.000	CT	1.040	0.31	21.70	25.3	2.1	1972	84368
		4.00			61.4	2.000	1.000	CT	1.010	0.32	22.10			1972	84368
		2.00			62.6	1.500	0.750	CT	0.800	0.49	27.60			1972	84368
		2.50			62.6	1.500	0.749	CT	0.781	0.53	28.80			1973	86213
		2.50			62.6	1.500	0.749	CT	0.797	0.49	27.60			1973	86213
		3.00			62.6	1.500	0.750	CT	0.780	0.53	28.80			1972	84368
		1.00			65.2	1.500	0.750	CT	0.830	0.40	26.00			1972	84368
		---			65.5	1.000	0.500	CT	0.500	0.39	26.00			1972	83058
		---			65.5	1.000	0.500	CT	0.500	0.46	28.10			1972	83058
		3.00			65.6	2.000	1.000	CT	1.080	0.31	23.00			1972	84368
		3.00			65.6	2.000	0.998	CT	1.084	0.31	23.00			1973	86213
		1.00			65.7	1.000	0.500	CT	0.481	0.33	23.70			1973	86213
		---			65.7	1.000	0.500	CT	0.500	0.36	24.80			1972	83242
		1.00			65.7	1.000	0.500	CT	0.527	0.38	25.70			1973	86213

TABLE 8.16.2.1 (CONTINUED)

ALUMINUM 7175 K_{Ic}

CONDITION	PRODUCT		TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN			CRACK LENGTH (in.) A	2.5 * $(K_{Ic}/TYS)^2$ (in.)	K_{Ic}			DATE	REFER
	FORM	THICK (in.)				WIDTH (in.) W	THICK (in.) B	DESIGN			K_{Ic} (Ksi * $\sqrt{in.}$)	K_{Ic} MEAN	STAN DEV		
T736 Cont'd	Forging Cont'd	---	R.T. Cont'd	S-L Cont'd	65.7	1.000	0.500	CT	0.500	0.36	24.80	Cont'd	Cont'd	1972	83242
		1.00			65.7	1.000	0.500	CT	0.509	0.43	27.20			1973	86213
		---			65.7	1.000	0.500	CT	0.500	0.36	24.80			1972	83242
		---			65.7	1.000	0.500	CT	0.500	0.36	24.80			1972	83242
		2.00			66.4	1.500	0.750	CT	0.830	0.39	26.30			1972	84368
		2.00			66.7	1.500	0.750	CT	0.827	0.33	24.10			1973	86213
		2.00			67.4	1.000	0.500	CT	0.490	0.35	25.10			1972	84368
		1.00			67.4	1.000	0.500	CT	0.500	0.37	25.80			1972	84368
		2.00			68.4	1.000	0.500	CT	0.490	0.28	22.70			1972	84368
T736	Forging	0.50	82	L-T	70.6	1.000	0.500	CT	0.517	0.37	27.20	28.7	2.4	1973	86213
		0.50			70.6	1.000	0.501	CT	0.539	0.38	27.50			1973	86213
		1.50			76.9	0.990	0.499	CT	0.477	0.42	31.50			1973	86213
T736	Forging	4.00	82	T-L	59.9	1.990	1.000	CT	1.074	0.50	26.90	26.2	1.4	1973	86213
		4.00			59.9	1.990	0.998	CT	1.087	0.51	27.10			1973	86213
		2.75			73.8	2.000	0.999	CT	1.102	0.28	24.60			1973	86213
T736	Forging	4.00	82	S-L	61.4	2.000	0.998	CT	1.037	0.31	21.70	24.9	2.6	1973	86213
		4.00			61.4	2.000	0.998	CT	1.009	0.32	22.10			1973	86213
		2.50			65.1	1.500	0.750	CT	0.804	0.54	30.30			1973	86213
		2.50			65.1	1.500	0.749	CT	0.820	0.41	26.40			1973	86213
		1.50			65.2	1.500	0.750	CT	0.830	0.40	26.00			1973	86213
		1.00			66.3	1.000	0.500	CT	0.497	0.38	26.00			1973	86213
		2.00			66.4	1.500	0.749	CT	0.832	0.39	26.30			1973	86213

TABLE 8.16.2.1 (CONTINUED)

ALUMINUM 7175 K_{Ic}

CONDITION	PRODUCT FORM	PRODUCT THICK (in.)	TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN WIDTH (in.) W	SPECIMEN THICK (in.) B	SPECIMEN DESIGN	CRACK LENGTH (in.) A	$2.5 * (K_{Ic}/TYS)^2$ (in.)	K_{Ic} (Ksi * $\sqrt{in.}$)	K_{Ic} MEAN	K_{Ic} STAN DEV	DATE	REFER
T736 Cont'd	Forging Cont'd	3.00	82 Cont'd	S-L Cont'd	67.1	1.000	0.498	CT	0.528	0.39	26.40	Cont'd	Cont'd	1973	86213
		1.50			67.4	1.000	0.499	CT	0.500	0.37	25.80			1973	86213
		1.50			67.4	0.990	0.499	CT	0.492	0.35	25.10			1973	86213
		3.00			67.7	1.000	0.500	CT	0.545	0.36	25.70			1973	86213
		1.50			68.4	0.990	0.499	CT	0.490	0.28	22.70			1973	86213
		3.00			69.8	1.500	0.749	CT	0.759	0.21	20.20			1973	86213
		3.00			69.8	1.490	0.750	CT	0.804	0.28	23.20			1973	86213
T736	Forging	5.00	84	L-T	62.1	2.990	1,500	CT	1.639	0.73	33.60	34.3	0.9	1973	86213
		2.00			65.6	2.000	1.000	CT	1.097	0.73	35.40			1973	86213
		2.00			67.1	2.000	1.000	CT	1.088	0.64	34.00			1973	86213
T736	Forging	5.00	84	T-L	70.0	2.991	1.500	CT	1.594	0.38	27.40	25.3	3.5	1973	86213
		5.00			70.0	2.991	1.500	CT	1.586	0.43	29.00			1973	86213
		3.00			74.2	2.000	1.001	CT	1.072	0.25	23.40			1973	86213
		3.00			74.2	2.000	0.999	CT	1.070	0.21	21.40			1973	86213
T736	Forging	3.00	84	S-L	62.8	1.490	0.750	CT	0.791	0.62	31.30	28.8	2.3	1973	86213
		0.75			66.3	1.000	0.501	CT	0.554	0.46	28.30			1973	86213
		0.75			66.3	1.000	0.501	CT	0.536	0.41	26.80			1973	86213
T736	Forging	3.00	85	L-T	71.6	2.000	0.999	CT	1.107	0.73	38.60	---	---	1973	86213
T736	Forging	3.00	85	T-L	73.8	2.000	1.000	CT	1.093	0.32	26.60	---	---	1973	86213
T736	Forging	3.00	85	S-T	75.5	1.500	0.749	CT	0.810	0.24	23.50	---	---	1973	86213
T736	Forging	3.00	88	T-L	69.3	2.000	1.000	CT	1.097	0.30	23.90	23.3	0.8	1973	86213
		3.00			69.4	2.000	1.000	CT	1.099	0.27	22.70			1973	86213

TABLE 8.16.2.1 (CONTINUED)

ALUMINUM 7175 K_{Ic}

CONDITION	PRODUCT FORM	PRODUCT THICK (in.)	TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN WIDTH (in.) W	SPECIMEN THICK (in.) B	SPECIMEN DESIGN	CRACK LENGTH (in.) A	$2.5*(K_{Ic}/TYS)^2$ (in.)	K_{Ic} (Ksi * √in.)	K_{Ic} MEAN	STAN DEV	DATE	REFER
T736	Forging	3.00	88	S-L	66.2	1.000	0.498	CT	0.539	0.40	26.50	25.6	1.0	1973	86213
		3.00			66.3	1.000	0.498	CT	0.532	0.38	25.70			1973	86213
		3.00			68.5	1.000	0.500	CT	0.552	0.32	24.50			1973	86213
T736	Forging	0.50	89	S-L	67.1	1.000	0.501	CT	0.549	0.43	27.90	27.1	1.1	1973	86213
		0.50			67.1	1.000	0.500	CT	0.531	0.38	26.30			1973	86213
T736	Forging	2.50	200	S-T	60.5	2.000	1.000	CT	1.000	0.74	33.00	34.1	1.0	1972	83058
		2.50			60.5	2.000	1.000	CT	1.000	0.81	34.40			1972	83058
		2.50			60.5	2.000	1.000	CT	1.000	0.84	35.00			1972	83058
T73652	Forging	1.25	R.T.	L-T	63.5	2.501	1.251	CT	1.308	0.45	27.00	32.7	8.0	1977	MA005
		3.10			71.7	2.506	1.250	CT	1.343	0.71	38.30			1981	MA002
T73652	Forging	1.25	R.T.	T-L	63.5	2.498	1.243	CT	1.335	0.34	23.50	---	---	1977	MA005
T73652	Forging	3.75	82	L-T	62.9	4.000	1.999	CT	2.162	1.00	39.80	---	---	1973	86213
T76511	Extrusion	3.75	R.T.	L-T	62.1	3.972	2.000	CT	2.105	0.93	38.40	32.9	3.5	1978	MPC01
		3.75			62.7	4.031	2.000	CT	2.056	0.90	37.70			1978	MPC01
		3.75			62.8	4.023	1.998	CT	2.092	0.90	38.10			1978	MPC01
		3.75			63.4	4.039	2.000	CT	2.100	0.90	38.30			1978	MPC01
		3.75			63.4	3.979	2.000	CT	2.069	0.87	37.80			1978	MPC01
		3.75			63.5	3.977	2.000	CT	2.068	0.90	38.10			1978	MPC01
		3.75			63.7	4.029	2.000	CT	2.095	0.93	39.00			1978	MPC01
		3.75			64.0	3.987	2.000	CT	2.153	0.87	37.90			1978	MPC01
		3.75			64.1	3.990	2.000	CT	2.075	0.84	37.40			1978	MPC01
		3.75			64.4	4.010	2.000	CT	2.085	0.84	37.40			1978	MPC01
		3.75			64.5	3.979	2.000	CT	2.109	0.84	37.90			1978	MPC01

TABLE 8.16.2.1 (CONTINUED)

ALUMINUM 7175 K_{Ic}

CONDITION	PRODUCT FORM	PRODUCT THICK (in.)	TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN WIDTH (in.) W	SPECIMEN THICK (in.) B	SPECIMEN DESIGN	CRACK LENGTH (in.) A	$2.5 \cdot (K_{Ic}/TYS)^2$ (in.)	K_{Ic} (Ksi $\cdot \sqrt{in.}$)	K_{Ic} MEAN	STAN DEV	DATE	REFER
T76511 Cont'd	Extrusion Cont'd	3.75	R.T. Cont'd	L-T Cont'd	64.7	3.970	2.000	CT	2.104	0.87	38.50	Cont'd	Cont'd	1978	MPC01
		1.40			67.5	0.994	0.600	CT	0.507	0.50	30.40			1978	MPC01
		1.40			67.5	1.010	0.600	CT	0.505	0.46	29.20			1978	MPC01
		1.80			67.5	4.008	1.765	CT	2.044	0.50	30.90			1978	MPC01
		1.40			67.5	1.004	0.600	CT	0.492	0.44	28.40			1978	MPC01
		3.00			68.3	2.002	0.996	CT	1.001	0.65	35.20			1978	MPC01
		3.00			68.3	2.002	0.996	CT	1.021	0.55	32.70			1978	MPC01
		3.00			68.3	1.986	0.996	CT	1.013	0.57	33.30			1978	MPC01
		3.00			68.3	1.996	0.996	CT	1.018	0.65	35.00			1978	MPC01
		1.80			68.3	4.014	1.764	CT	2.007	0.44	29.10			1978	MPC01
		3.50			68.5	1.982	0.999	CT	0.991	0.50	30.90			1978	MPC01
		3.50			68.5	2.006	0.999	CT	0.983	0.48	30.60			1978	MPC01
		3.50			68.5	2.002	0.999	CT	1.001	0.52	31.90			1978	MPC01
		3.50			68.5	1.980	0.999	CT	0.970	0.44	28.80			1978	MPC01
		3.50			68.5	1.998	0.999	CT	0.979	0.48	30.30			1978	MPC01
		1.80			68.8	3.000	1.500	CT	---	0.59	33.50			1981	LG003
		3.00			69.5	1.985	0.999	CT	1.032	0.52	32.00			1978	MPC01
		3.00			69.5	2.004	0.999	CT	1.022	0.52	32.00			1978	MPC01
		3.50			69.5	2.008	0.997	CT	1.024	0.57	34.00			1978	MPC01
		3.50			69.5	1.983	0.997	CT	1.031	0.62	34.80			1978	MPC01
		3.00			69.5	2.004	0.996	CT	1.002	0.55	32.80			1978	MPC01
		3.00			69.5	2.004	0.998	CT	1.002	0.52	32.10			1978	MPC01

TABLE 8.16.2.1 (CONTINUED)

ALUMINUM 7175 K_{Ic}

CONDITION	PRODUCT		TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN			CRACK LENGTH (in.) A	2.5 * $(K_{Ic}/TYS)^2$ (in.)	K_{Ic}			DATE	REFER
	FORM	THICK (in.)				WIDTH (in.) W	THICK (in.) B	DESIGN			K_{Ic} (Ksi * $\sqrt{in.}$)	K_{Ic} MEAN	STAN DEV		
T76511 Cont'd	Extrusion Cont'd	3.00	R.T. Cont'd	L-T Cont'd	69.5	2.000	0.999	CT	1.020	0.48	30.90	Cont'd	Cont'd	1978	MPC01
		3.00			69.5	2.004	0.999	CT	1.022	0.50	31.90			1978	MPC01
		3.00			69.5	1.990	0.995	CT	0.995	0.57	33.50			1978	MPC01
		3.00			69.5	2.004	0.998	CT	1.002	0.48	30.90			1978	MPC01
		3.00			69.5	2.008	0.996	CT	1.004	0.55	32.80			1978	MPC01
		1.40			69.6	1.994	1.001	CT	0.997	0.42	29.10			1978	MPC01
		1.40			69.6	2.008	1.001	CT	1.024	0.38	27.80			1978	MPC01
		1.40			69.6	1.986	1.001	CT	0.993	0.38	27.60			1978	MPC01
		1.40			69.6	1.983	1.001	CT	1.051	0.38	27.70			1978	MPC01
		1.80			69.6	4.022	1.765	CT	1.971	0.44	29.40			1978	MPC01
		1.40			69.6	2.004	1.001	CT	0.982	0.38	27.20			1978	MPC01
		2.80			70.5	1.990	1.000	CT	1.015	0.46	30.80			1978	MPC01
		3.50			71.0	1.990	1.000	CT	0.995	0.48	31.50			1978	MPC01
		3.50			71.0	1.992	0.998	CT	0.996	0.48	31.90			1978	MPC01
		3.50			71.0	1.986	1.001	CT	0.993	0.52	33.00			1978	MPC01
T76511	Extrusion	3.50	R.T.	T-L	62.2	1.992	1.000	CT	1.016	0.36	24.00	22.6	2.5	1978	MPC01
		3.50			62.2	2.011	0.999	CT	1.066	0.38	24.60			1978	MPC01
		3.50			62.2	1.988	0.999	CT	1.014	0.36	24.00			1978	MPC01
		3.50			62.2	2.004	0.999	CT	1.102	0.34	23.50			1978	MPC01
		3.50			62.2	2.006	0.999	CT	0.983	0.30	22.00			1978	MPC01
		3.50			63.0	2.014	0.999	CT	1.007	0.34	23.50			1978	MPC01
		3.50			63.0	2.002	0.999	CT	0.961	0.28	21.80			1978	MPC01

TABLE 8.16.2.1 (CONTINUED)

ALUMINUM 7175 K_{Ic}

CONDITION	PRODUCT		TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN			CRACK LENGTH (in.) A	$2.5*(K_{Ic}/TYS)^2$ (in.)	K_{Ic}			DATE	REFER
	FORM	THICK (in.)				WIDTH (in.) W	THICK (in.) B	DESIGN			K_{Ic} (Ksi * √in.)	K_{Ic} MEAN	STAN DEV		
T76511 Cont'd	Extrusion Cont'd	3.00	R.T. Cont'd	T-L Cont'd	63.2	2.006	1.005	CT	1.003	0.28	21.70	Cont'd	Cont'd	1978	MPC01
		3.00			63.2	1.982	0.999	CT	1.011	0.28	21.50			1978	MPC01
		3.00			63.2	2.010	1.003	CT	0.985	0.27	21.20			1978	MPC01
		3.00			63.2	2.018	1.004	CT	0.989	0.27	21.20			1978	MPC01
		1.40			64.0	1.002	0.599	CT	0.501	0.28	22.10			1978	MPC01
		1.40			64.0	0.994	0.600	CT	0.497	0.27	21.40			1978	MPC01
		1.40			64.0	1.010	0.600	CT	0.505	0.28	21.80			1978	MPC01
		1.40			64.0	0.996	0.599	CT	0.488	0.25	21.00			1978	MPC01
		3.00			64.4	2.004	1.002	CT	1.002	0.25	20.80			1978	MPC01
		3.00			64.4	2.004	1.015	CT	1.004	0.27	21.30			1978	MPC01
		3.00			64.4	1.984	1.004	CT	0.972	0.25	21.00			1978	MPC01
		3.00			64.6	1.992	0.996	CT	0.936	0.25	21.00			1978	MPC01
		3.00			64.6	2.015	0.996	CT	0.967	0.27	21.40			1978	MPC01
		3.00			64.6	1.988	0.995	CT	0.994	0.27	21.70			1978	MPC01
		3.00			64.6	2.010	0.995	CT	0.965	0.25	21.20			1978	MPC01
		3.00			64.6	1.996	0.995	CT	0.998	0.27	21.70			1978	MPC01
		3.50			64.6	2.010	0.995	CT	1.025	0.24	20.40			1978	MPC01
		1.80			66.2	3.988	1.764	CT	2.034	0.42	27.20			1978	MPC01
		1.80			66.7	3.996	1.764	CT	2.078	0.42	27.40			1978	MPC01
		1.80			67.0	3.000	1.500	CT	---	0.56	31.70			1981	LG003
		1.40			68.2	2.005	1.000	CT	1.123	0.24	21.40			1978	MPC01
		1.40			68.2	1.989	1.000	CT	1.074	0.24	21.20			1978	MPC01

TABLE 8.16.2.1 (CONTINUED)

ALUMINUM 7175 K_{Ic}

CONDITION	PRODUCT		TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN			CRACK LENGTH (in.) A	2.5 * $(K_{Ic}/TYS)^2$ (in.)	K_{Ic}			DATE	REFER
	FORM	THICK (in.)				WIDTH (in.) W	THICK (in.) B	DESIGN			K_{Ic} (Ksi * $\sqrt{in.}$)	K_{Ic} MEAN	STAN DEV		
T76511 Cont'd	Extrusion Cont'd	1.40	R.T. Cont'd	T-L Cont'd	68.2	2.014	1.001	CT	1.027	0.22	20.80	Cont'd	Cont'd	1978	MPC01
		1.40			68.2	2.015	1.001	CT	1.088	0.21	20.40			1978	MPC01
		1.40			68.2	1.985	1.001	CT	1.072	0.22	20.70			1978	MPC01
		3.50			68.8	1.978	0.998	CT	1.009	0.25	22.40			1978	MPC01
		3.50			68.8	1.986	0.998	CT	0.993	0.27	23.00			1978	MPC01
		3.50			68.8	1.983	0.998	CT	1.031	0.34	25.60			1978	MPC01
		1.80			69.0	4.037	1.764	CT	2.059	0.40	27.60			1978	MPC01
T76511	Extrusion	3.00	R.T.	S-T	60.7	1.982	1.002	CT	0.991	0.30	21.50	21.4	0.7	1978	MPC01
		3.00			60.7	2.000	1.001	CT	0.960	0.28	20.70			1978	MPC01
		3.00			60.7	2.017	1.002	CT	0.968	0.32	21.90			1978	MPC01
		3.00			60.7	2.002	1.002	CT	0.981	0.28	21.00			1978	MPC01
		3.00			60.7	1.998	1.000	CT	0.939	0.27	20.60			1978	MPC01
		3.00			60.7	1.980	1.002	CT	0.970	0.30	21.80			1978	MPC01
		3.50			61.5	1.982	0.999	CT	0.991	0.28	21.40			1978	MPC01
		3.50			61.5	1.992	0.999	CT	0.976	0.28	21.20			1978	MPC01
		3.50			61.5	1.990	0.999	CT	0.975	0.27	20.60			1978	MPC01
		3.00			61.5	2.011	1.002	CT	0.945	0.30	21.90			1978	MPC01
		3.50			61.5	2.013	0.999	CT	0.966	0.27	20.70			1978	MPC01
		3.00			61.5	2.008	0.998	CT	1.004	0.27	20.90			1978	MPC01
		3.50			61.5	1.990	0.999	CT	0.975	0.24	19.60			1978	MPC01
		3.00			61.5	1.984	0.997	CT	1.012	0.30	21.70			1978	MPC01
		3.00			61.5	1.982	1.005	CT	0.971	0.28	21.40			1978	MPC01

TABLE 8.16.2.1 (CONCLUDED)

ALUMINUM 7175 K_{Ic}

CONDITION	PRODUCT FORM	PRODUCT THICK (in.)	TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN WIDTH (in.) W	SPECIMEN THICK (in.) B	SPECIMEN DESIGN	CRACK LENGTH (in.) A	2.5 * $(K_{Ic}/TYS)^2$ (in.)	K_{Ic} (Ksi * $\sqrt{in.}$)	K_{Ic} MEAN	STAN DEV	DATE	REFER
T76511 Cont'd	Extrusion Cont'd	3.00	R.T. Cont'd	S-T Cont'd	62.0	2.015	1.005	CT	0.927	0.28	21.50	Cont'd	Cont'd	1978	MPC01
		3.00			62.0	2.012	0.998	CT	1.006	0.28	21.30			1978	MPC01
		3.00			62.0	1.996	0.996	CT	0.978	0.30	22.30			1978	MPC01
		3.00			62.0	2.009	1.002	CT	0.924	0.30	21.70			1978	MPC01
		3.50			62.2	1.984	0.998	CT	0.992	0.27	20.90			1978	MPC01
		3.50			62.2	2.008	0.999	CT	0.964	0.28	21.50			1978	MPC01
		3.50			62.2	1.996	0.998	CT	0.998	0.32	23.00			1978	MPC01
		3.50			63.4	2.000	0.999	CT	0.960	0.30	22.60			1978	MPC01
		3.50			63.4	1.980	0.999	CT	0.970	0.28	21.90			1978	MPC01
		1.40			66.6	0.998	0.599	CT	0.479	0.25	21.50			1978	MPC01
		1.40			66.6	1.004	0.600	CT	0.472	0.24	20.90			1978	MPC01
		1.40			66.6	1.011	0.600	CT	0.465	0.22	20.50			1978	MPC01
		1.40			66.6	1.002	0.600	CT	0.451	0.25	21.60			1978	MPC01
T76511	Extrusion	1.80	R.T.	S-L	66.1	1.489	0.751	CT	0.804	0.27	22.30	20.9	1.3	1978	MPC01
		1.80			66.4	1.498	0.750	CT	0.779	0.22	20.00			1978	MPC01
		1.80			66.4	1.498	0.751	CT	0.809	0.22	20.30			1978	MPC01

TABLE 8.16.2.2

ALUMINUM 7175 K_C

CONDITION HEAT TREAT	PRODUCT FORM	PRODUCT THICK (in.)	TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN WIDTH (in.) W	SPECIMEN THICK (in.) B	CRACK LENGTH INIT (in.) $2a_o$	CRACK LENGTH FINAL (in.) $2a_f$	GROSS STRESS ONSET (Ksi) σ_o	GROSS STRESS MAX (Ksi) σ_{Max}	K_{app} (Ksi$\sqrt{in}$)	K_{app} MEAN	K_{app} STAN DEV	K_C (Ksi$\sqrt{in}$)	K_C MEAN	K_C STAN DEV	DATE	REFER
BUCKLING OF CRACK EDGES NOT RESTRAINED																			
T73511	Extru-sion	1.30	R.T.	L-T	63.4	5.910	0.551	1.880	---	---	34.20	62.80	---	---	---	---	---	1977	LG001
T73511	Extru-sion	1.30	R.T.	L-T	66.1	8.010	0.250	2.510	---	---	39.90	84.40	84.7	2.1	---	---	---	1977	LG001
		1.30			66.1	7.990	0.251	2.470	---	---	40.70	85.20			---			1977	LG001
		1.30			66.1	7.990	0.251	2.520	---	---	40.90	86.80			---			1977	LG001
		1.30			66.1	7.990	0.252	2.520	---	---	40.50	85.80			---			1977	LG001
		1.30			65.2	7.990	0.256	2.250	---	---	41.00	81.20			---			1977	LG001
T73511	Extru-sion	1.30	R.T.	L-T	66.8	8.010	0.497	2.150	---	---	41.70	80.30	78.6	2.1	---	---	---	1977	LG001
		1.30			66.8	8.000	0.500	2.080	---	---	42.70	80.60			---			1977	LG001
		1.30			66.1	8.000	0.501	3.940	4.350	24.80	28.80	84.80*			92.89*			1977	LG001
		1.30			66.1	8.000	0.501	2.250	3.300	35.20	37.40	74.00			95.36*			1977	LG001
		1.30			66.1	7.990	0.502	2.410	---	---	37.90	78.10			---			1977	LG001
		1.30			66.8	8.000	0.503	2.440	---	35.30	37.80	78.60			---			1977	LG001
		1.30			66.8	8.010	0.504	2.530	---	---	37.40	79.40			---			1977	LG001
		1.30			66.1	7.980	0.505	2.490	---	---	37.90	79.90			---			1977	LG001
		1.30			65.2	8.000	0.506	2.420	---	22.00	37.80	78.20			---			1977	LG001
T73511	Extru-sion	1.30	R.T.	L-T	66.1	7.980	0.749	2.480	---	---	37.30	78.30	75.3	4.2	---	---	---	1977	LG001
		1.30			66.8	7.990	0.749	2.540	---	---	33.90	72.30			---			1977	LG001

* NOTE: NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STANDARD DEVIATION.

TABLE 8.16.2.2 (CONCLUDED)

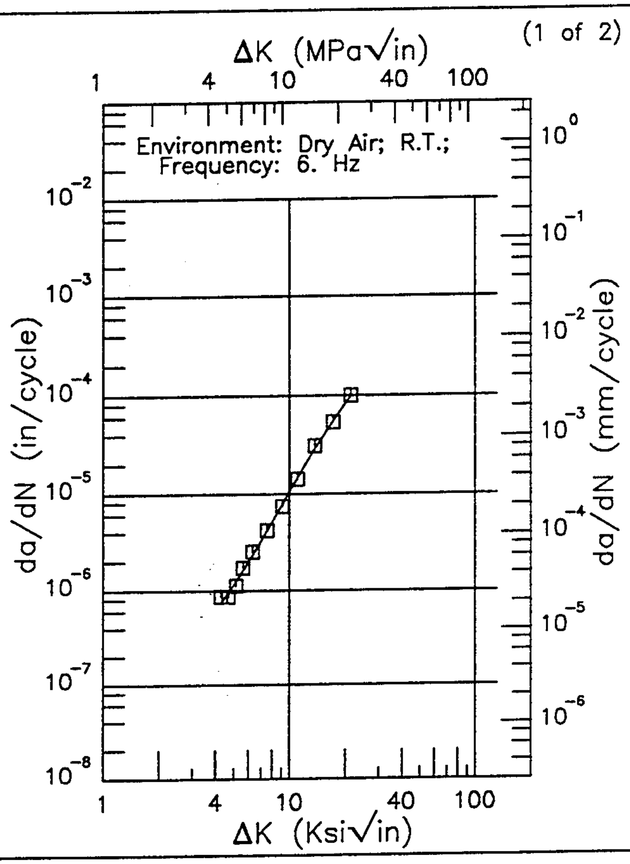
ALUMINUM 7175 K_C

CONDITION HEAT TREAT	PRODUCT FORM	PRODUCT THICK (in.)	TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN WIDTH (in.) W	SPECIMEN THICK (in.) B	CRACK LENGTH INIT (in.) $2a_o$	CRACK LENGTH FINAL (in.) $2a_f$	GROSS STRESS ONSET (Ksi) σ_o	GROSS STRESS MAX (Ksi) σ_{Max}	K_{app} (Ksi√in)	K_{app} MEAN	K_{app} STAN DEV	K_C (Ksi√in)	K_C MEAN	K_C STAN DEV	DATE	REFER
BUCKLING OF CRACK EDGES NOT RESTRAINED																			
T73511	Extru-sion	1.30	R.T.	T-L	64.0	8.000	0.248	2.590	---	---	25.70	55.40	54.9	5.5	---	---	---	1977	LG001
		1.30			64.0	7.990	0.250	2.570	---	---	21.50	46.30			---			1977	LG001
		1.30			64.0	8.010	0.250	2.490	---	---	29.20	61.50			---			1977	LG001
		1.30			63.3	8.010	0.251	2.540	---	---	22.80	48.50			---			1977	LG001
		1.30			63.3	8.020	0.251	2.530	---	---	27.10	57.60			---			1977	LG001
		1.30			64.0	8.030	0.251	2.520	---	---	26.50	56.10			---			1977	LG001
		1.30			65.6	7.980	0.252	2.260	---	15.90	25.80	51.30			---			1977	LG001
		1.30			65.6	8.020	0.252	2.530	---	---	25.60	54.40			---			1977	LG001
		1.30			64.0	8.000	0.253	2.540	---	---	29.60	63.00			---			1977	LG001
T73511	Extru-sion	1.30	R.T.	T-L	63.3	8.010	0.498	2.150	---	---	26.30	50.60	50.7	1.2	---	---	---	1977	LG001
		1.30			64.0	7.980	0.499	2.680	---	---	22.20	49.10			---			1977	LG001
		1.30			64.0	7.990	0.499	2.130	---	---	27.60	52.80			---			1977	LG001
		1.30			64.0	8.010	0.500	2.200	---	---	26.50	50.60			---			1977	LG001
		1.30			65.6	7.940	0.502	2.460	---	---	23.90	49.90			---			1977	LG001
		1.30			63.3	7.990	0.502	2.510	---	---	23.70	50.10			---			1977	LG001
		1.30			64.0	7.990	0.505	2.430	---	---	24.90	51.70			---			1977	LG001
T73511	Extru-sion	1.30	R.T.	T-L	64.0	8.000	0.509	2.470	---	17.40	25.30	53.00	51.0	2.8	---	---	---	1977	LG001
		1.30			65.6	8.010	0.509	2.400	---	17.20	23.80	49.00			---			1977	LG001

EF — 7175

Condition/Ht: T7354
Form: 6 in. Forging
Specimen Type: CT
Orientation: L–T
Stress Ratio: 0.1

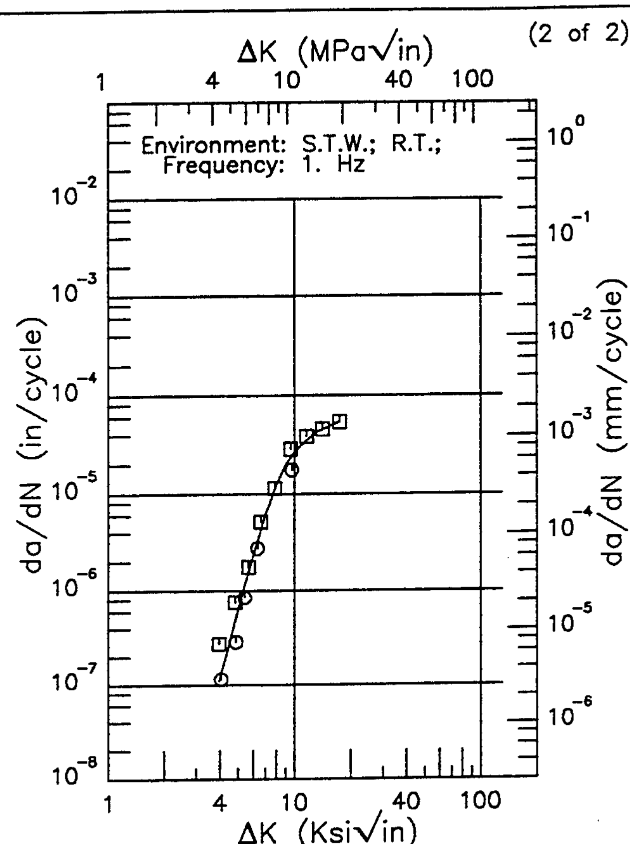
Yield Strength: 64.8 ksi
Ult. Strength: 75.7 ksi
Specimen Thk: 0.498 in.
Specimen Width: 2.547 – 2.55 in.
Ref: GD002



ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)
4.27 (min)	0.746
5.	1.15
6.	1.99
7.	3.27
8.	5.08
9.	7.53
10.	10.7
13.	24.8
16.	45.8
20.	83.0
21.32 (max)	97.2

RMS % Error: 8.01

Life Prediction Ratio Summary: 0. .5 .8 1.25 2.



ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)
3.96 (min)	0.110
4.	0.119
5.	0.631
6.	2.32
7.	6.14
8.	12.4
9.	19.8
10.	27.0
13.	42.1
16.	50.5
17.40 (max)	54.0

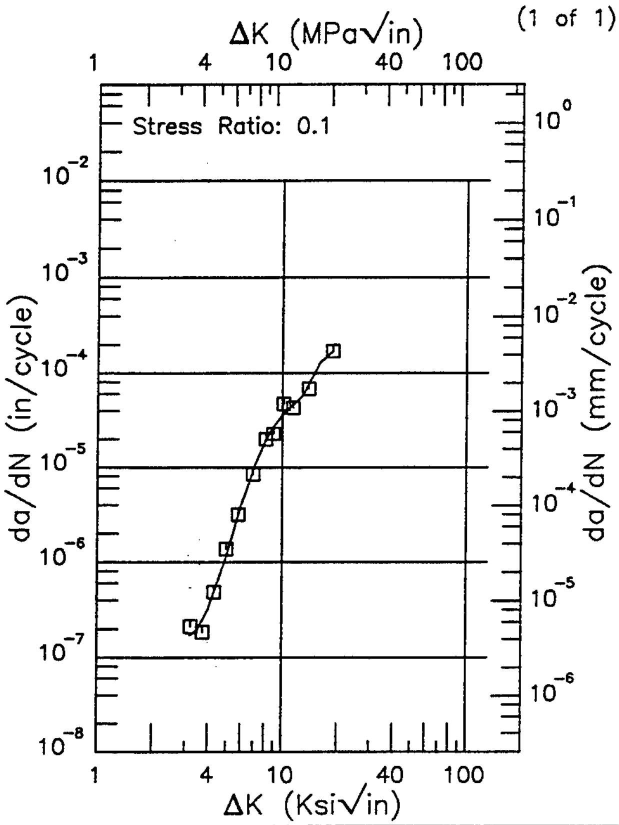
RMS % Error: 46.01

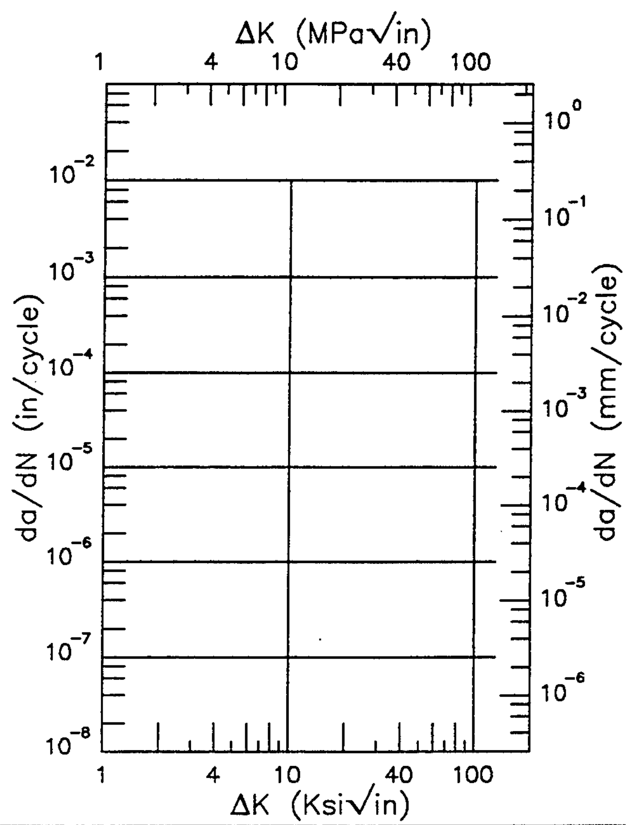
Life Prediction Ratio Summary: 0. .5 .8 1.25 2.

Figure 8.16.3.1.1

Condition/Ht: T7354
Form: 6 in. Forging
Specimen Type: CT
Orientation: T–L
Frequency: 1 Hz
Environment: S.T.W.; RT

Yield Strength: 62.6 ksi
Ult. Strength: 73.5 ksi
Specimen Thk: 0.499 in.
Specimen Width: 2.55 in.
Ref: GD002





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
3.20 (min)	0.170
3.5	0.194
4.	0.314
5.	1.15
6.	3.89
7.	9.88
8.	18.4
9.	27.5
10.	36.0
13.	58.1
16.	130.
18.60 (max)	168.

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error 15.44

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

RMS % Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

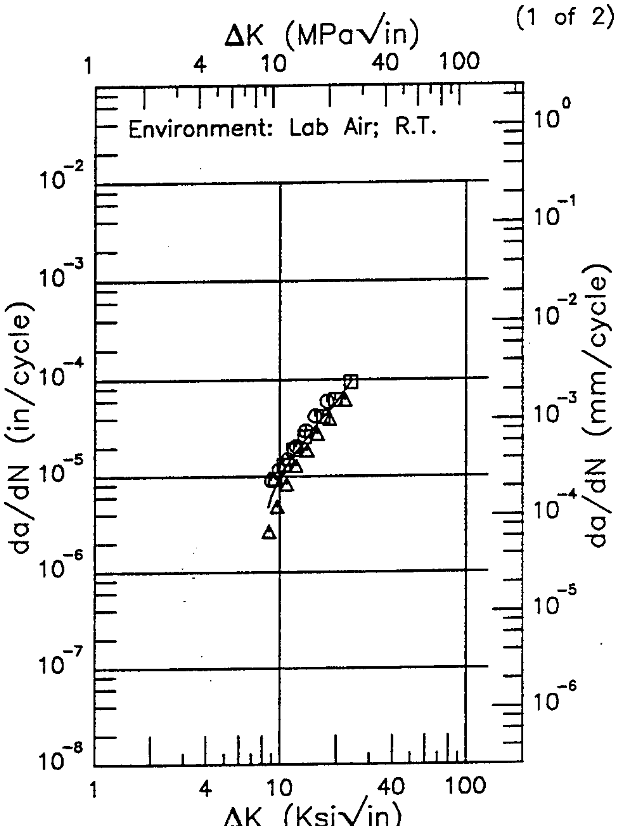
Figure 8.16.3.1.2

E 7175

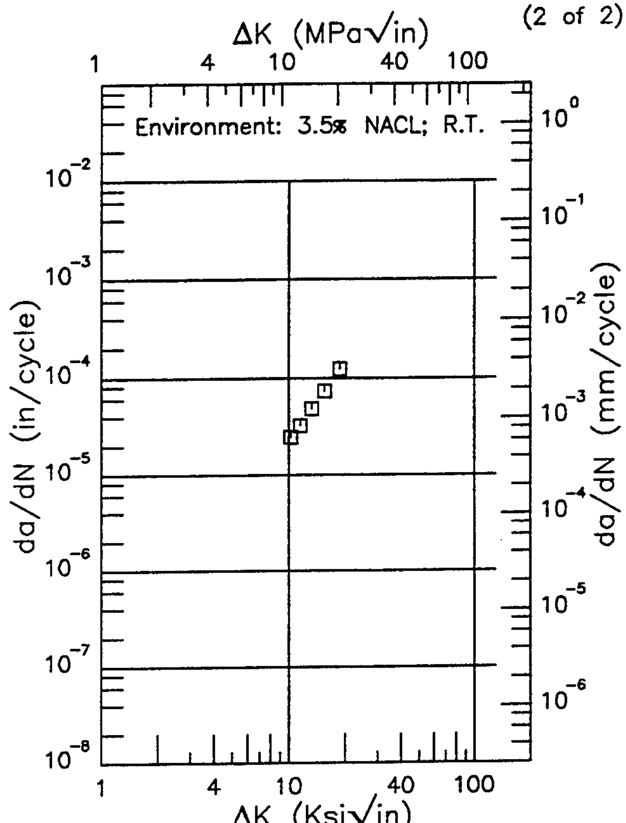
Condition/Ht: T736
Form: 0.7 in. Forging
Specimen Type: CT
Orientation: L–T
Stress Ratio: 0.02
Frequency: 10 Hz

Yield Strength: 68.5 ksi
Ult. Strength: 77.5 ksi
Specimen Thk: 0.7 in.
Specimen Width: 1.4 in.
Ref: 85880

(1 of 2)



(2 of 2)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
8.66 (min)	4.81
9.	6.25
10.	10.5
13.	20.9
16.	36.0
20.	57.5
23.70 (max)	92.4

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error
25.55

Life Prediction Ratio Summary

△ □○

0. .5 .8 1.25 2.

RMS % Error

Life Prediction Ratio Summary

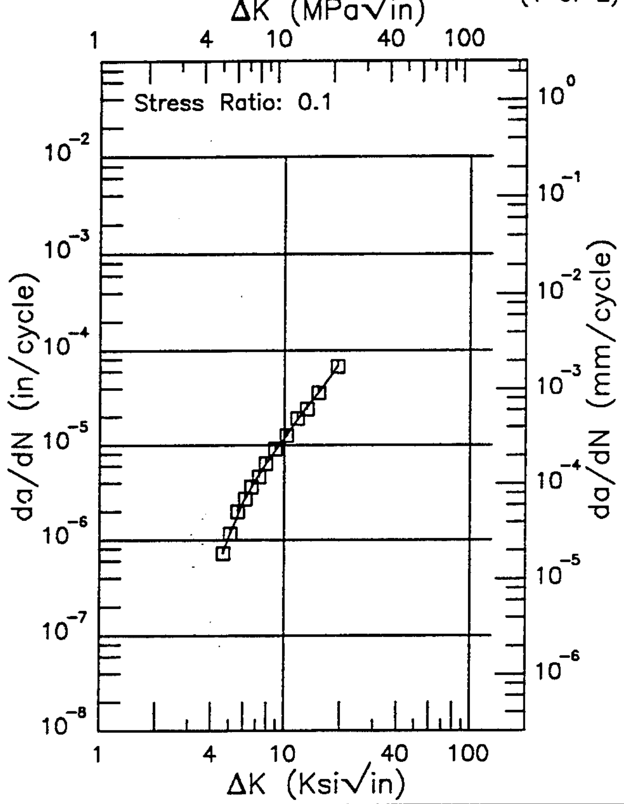
0. .5 .8 1.25 2.

Figure 8.16.3.1.3

Condition/Ht: T736
Form: 1 in. Forging
Specimen Type: CT
Orientation: L–T
Frequency: 6 Hz
Environment: DRY AIR; RT

Yield Strength: 69.3 ksi
Ult. Strength: 78.7 ksi
Specimen Thk: 0.401 in.
Specimen Width: 2.566 – 2.571 in.
Ref: GD001

(1 of 2)



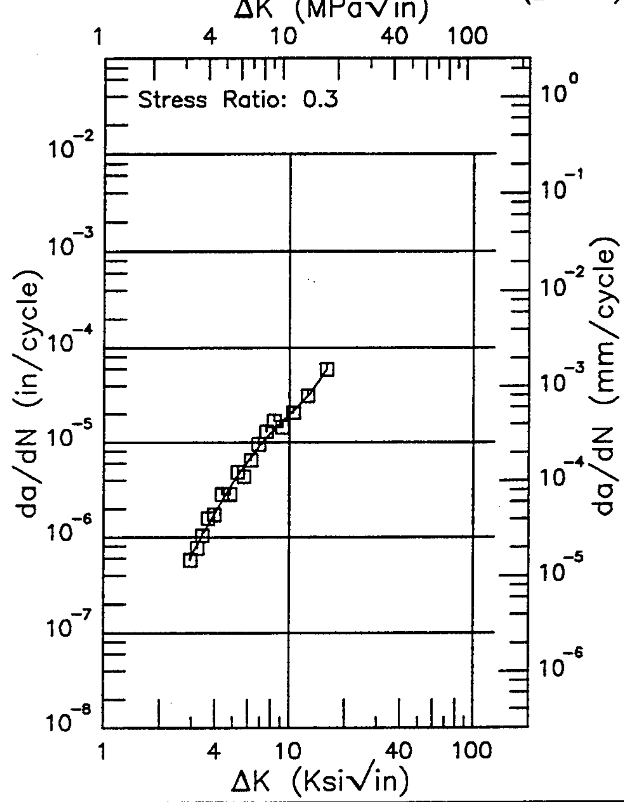
ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
4.64 (min)	0.722
5.	1.10
6.	2.54
7.	4.37
8.	6.49
9.	8.93
10.	11.8
13.	24.0
16.	40.7
19.27 (max)	68.0

RMS % Error: 3.54

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

(2 of 2)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
2.93 (min)	0.593
3.	0.648
3.5	1.14
4.	1.83
5.	3.76
6.	6.35
7.	9.38
8.	12.6
9.	16.0
10.	19.6
13.	33.2
15.83 (max)	58.9

RMS % Error: 12.63

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

Figure 8.16.3.1.4

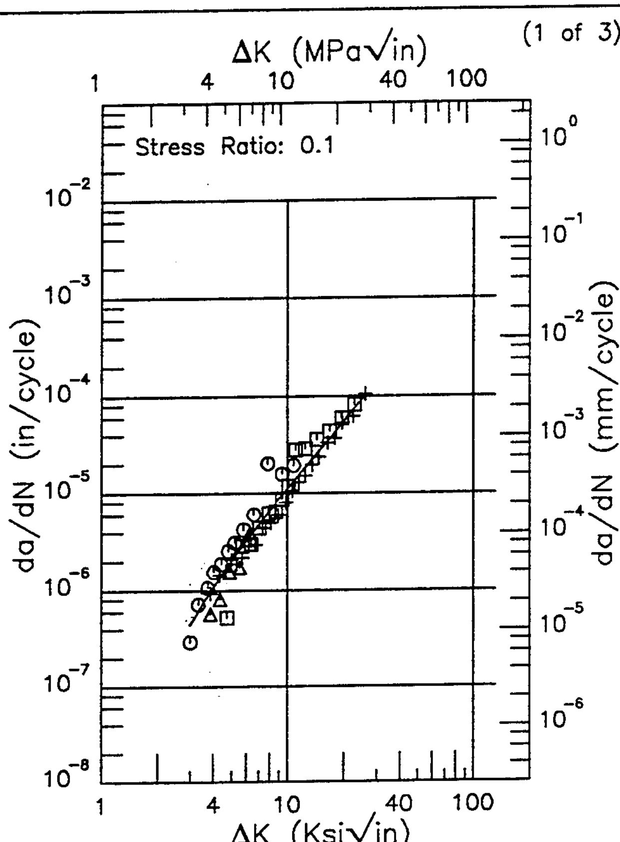
7175

R

Condition/Ht: T736
Form: 1 in. Forging
Specimen Type: CT
Orientation: L-T
Frequency: 1 Hz
Environment: H.H.A.; RT

Yield Strength: 69.3 ksi
Ult. Strength: 78.7 ksi
Specimen Thk: 0.398 – 0.404 in.
Specimen Width: 2.545 – 2.57 in.
Ref: GD001

(1 of 3)

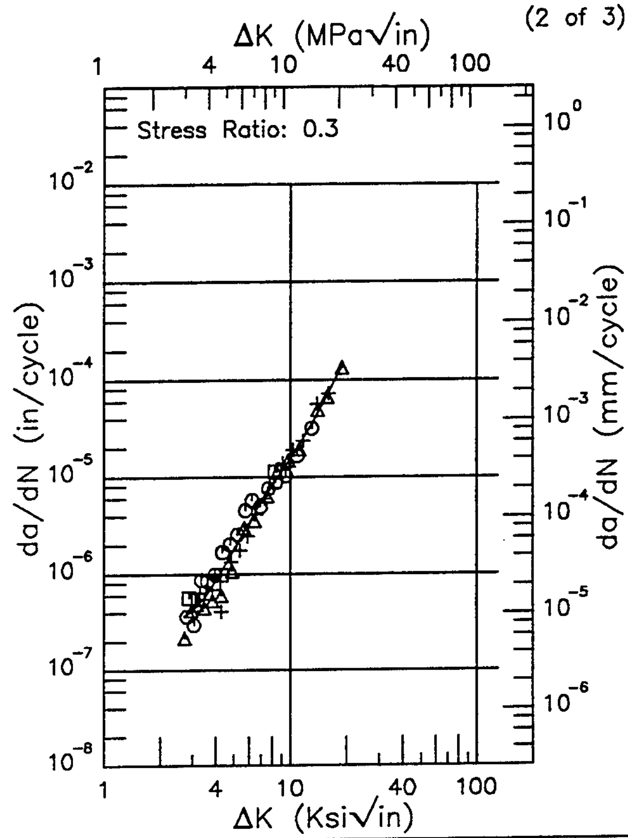


ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
2.99 (min)	0.440
3.	0.445
3.5	0.726
4.	1.08
5.	2.03
6.	3.27
7.	4.82
8.	6.65
9.	8.78
10.	11.2
13.	20.4
16.	32.8
20.	55.1
25.	94.4
25.85 (max)	103.

RMS % Error 43.12

Life Prediction Ratio Summary: Δ +□ ○ on scale 0. .5 .8 1.25 2.

(2 of 3)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
2.70 (min)	0.369
3.	0.419
3.5	0.578
4.	0.840
5.	1.77
6.	3.34
7.	5.53
8.	8.17
9.	11.4
10.	15.3
13.	34.9
16.	72.8
18.80 (max)	133.

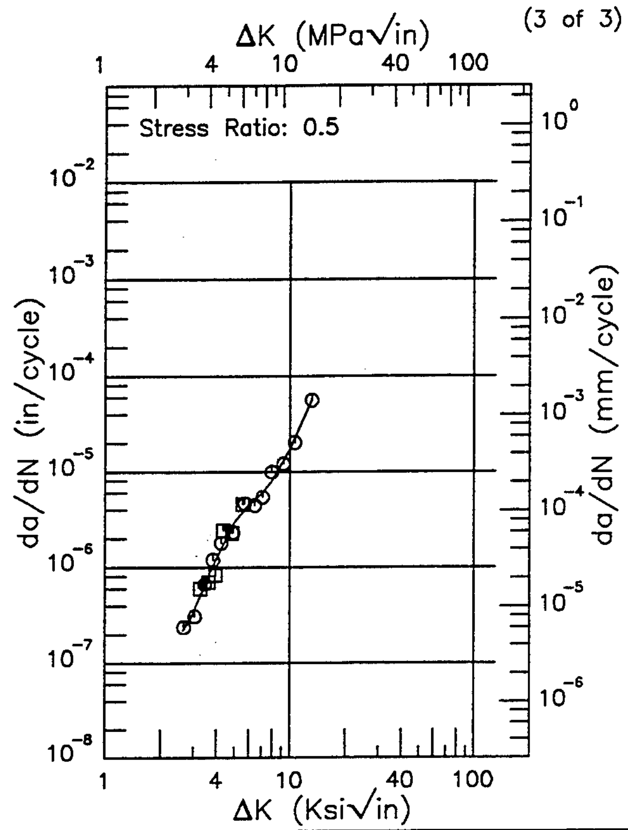
RMS % Error 25.99

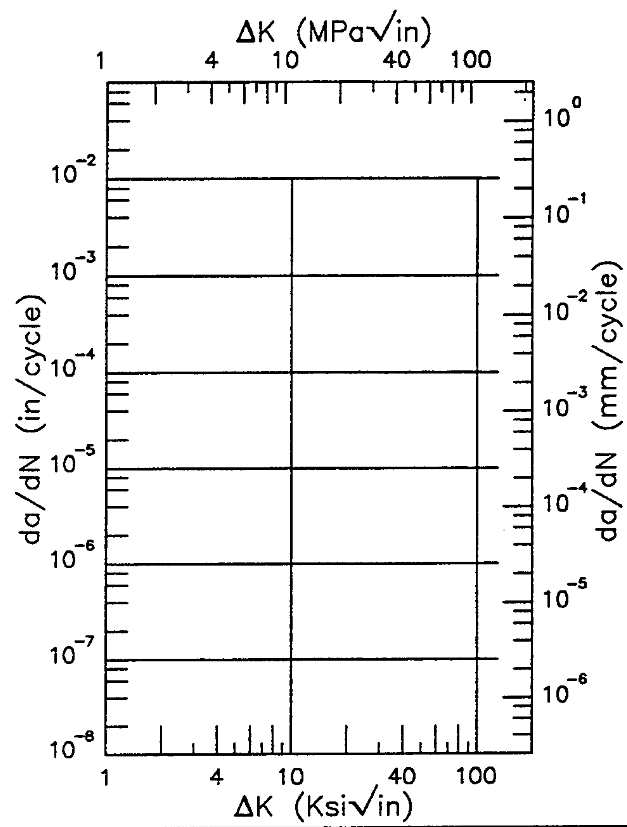
Life Prediction Ratio Summary: +Δ ○ □ on scale 0. .5 .8 1.25 2.

Figure 8.16.3.1.5

Condition/Ht: T736
Form: 1 in. Forging
Specimen Type: CT
Orientation: L–T
Frequency: 1 Hz
Environment: H.H.A.; RT

Yield Strength: 69.3 ksi
Ult. Strength: 78.7 ksi
Specimen Thk: 0.398 – 0.404 in.
Specimen Width: 2.545 – 2.57 in.
Ref: GD001





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
2.66 (min)	0.221
3.	0.344
3.5	0.676
4.	1.24
5.	2.97
6.	4.56
7.	5.95
8.	8.20
9.	12.2
10.	17.3
13.	53.6
13.04 (max)	55.5

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error
18.03

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

RMS % Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

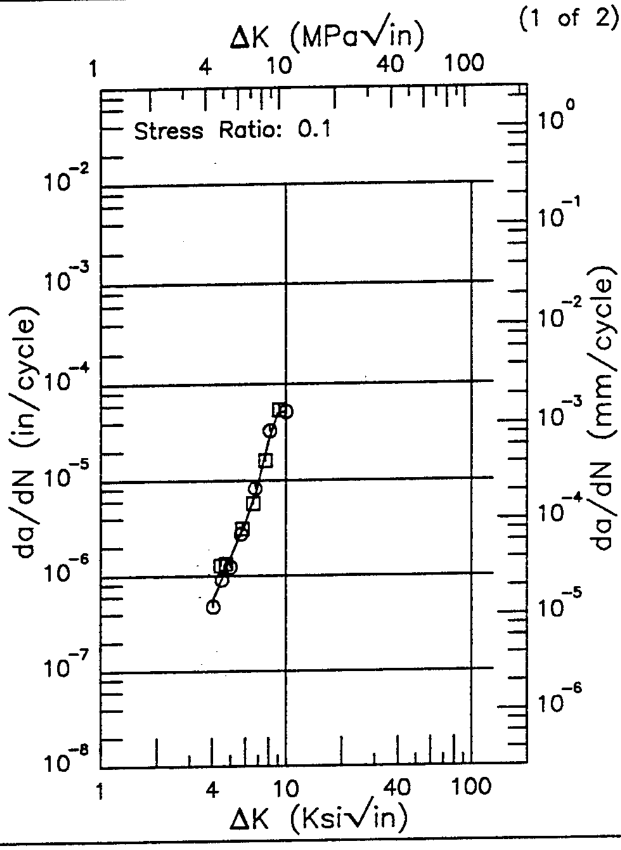
Figure 8.16.3.1.5 (Concluded)

R

7175

Condition/Ht: T736	Yield Strength: 69.3 ksi
Form: 1 in. Forging	Ult. Strength: 78.7 ksi
Specimen Type: CT	Specimen Thk: 0.394 – 0.403 in.
Orientation: L–T	Specimen Width: 2.54 – 2.567 in.
Frequency: 1 Hz	Ref: GD001
Environment: S.T.W.; RT	

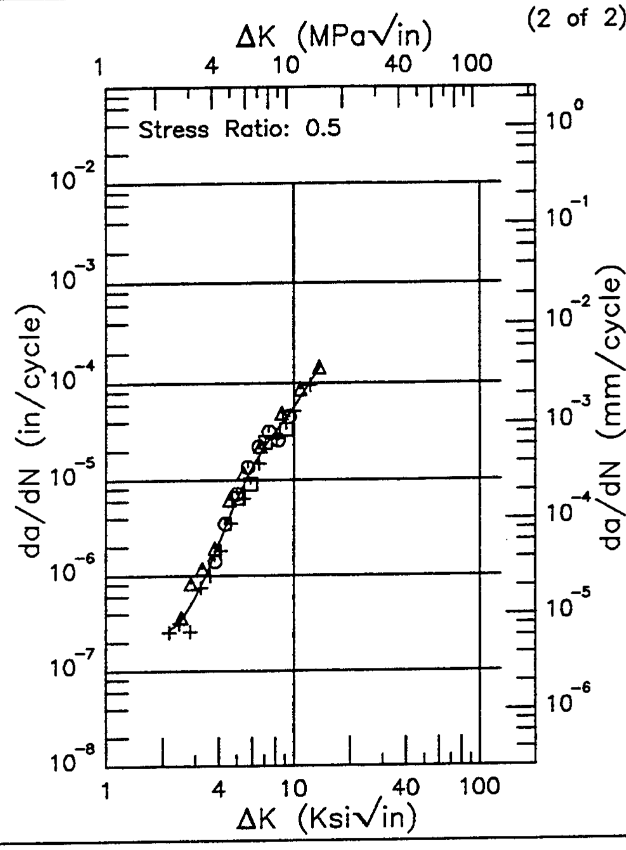
(1 of 2)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
4.02 (min)	0.540
5.	1.57
6.	3.49
7.	8.96
8.	26.0
9.	51.2
9.94 (max)	51.9

RMS % Error	Life Prediction Ratio Summary
17.16	0. .5 .8 1.25 2.

(2 of 2)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
2.15 (min)	0.267
2.5	0.334
3.	0.590
3.5	1.13
4.	2.14
5.	6.28
6.	13.5
7.	22.2
8.	31.8
9.	42.8
10.	56.8
13.	122.
13.68 (max)	139.

RMS % Error	Life Prediction Ratio Summary
25.63	0. .5 .8 1.25 2.

Figure 8.16.3.1.6

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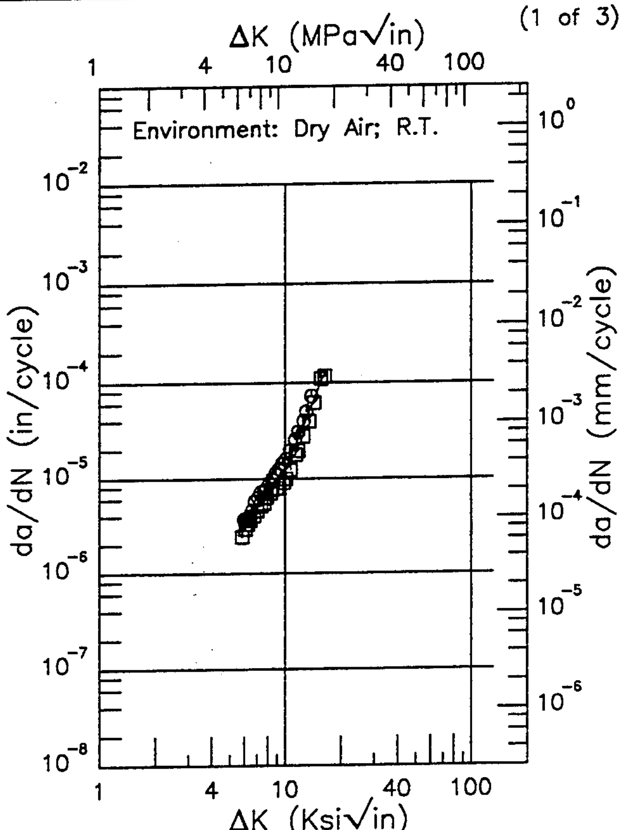
E 7175

Condition/Ht: T736
Form: 4 – 5 in. Forging
Specimen Type: CT
Orientation: T–L
Stress Ratio: 0.33
Frequency: 18.3 Hz

Yield Strength: 59.9 – 60.1 ksi
Ult. Strength: 69.5 – 70.8 ksi
Specimen Thk: 1.501 – 1.502 in.
Specimen Width: 3.8 in.
Ref: 86842

(1 of 3)

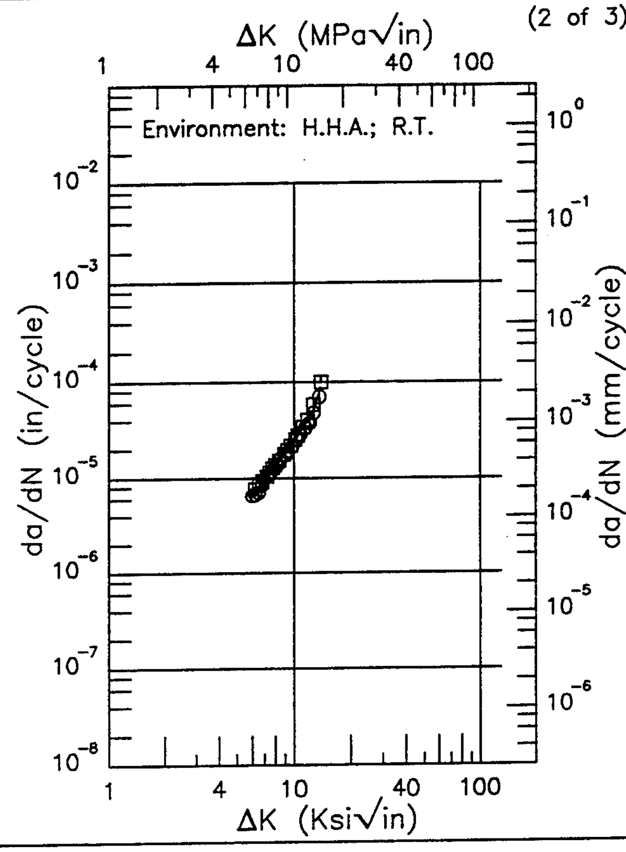


ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
5.85 (min)	2.87
6.	3.16
7.	5.18
8.	7.31
9.	9.55
10.	12.5
13.	40.9
16.	116.
16.26 (max)	120.

RMS % Error: 18.20

Life Prediction Ratio Summary: 0. .5 .8 1.25 2.

(2 of 3)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
6.01 (min)	6.39
7.	9.65
8.	13.7
9.	18.2
10.	23.8
13.	55.8
13.84 (max)	88.7

RMS % Error: 5.72

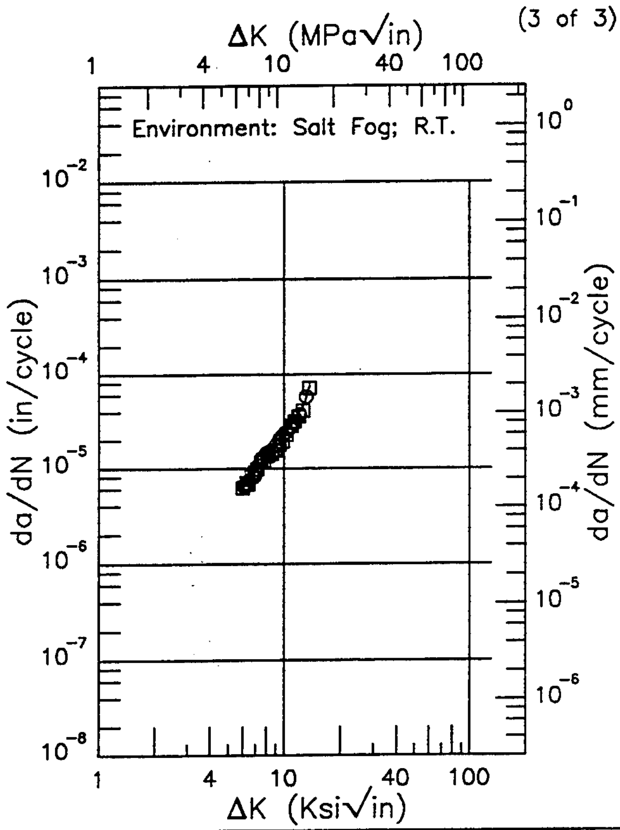
Life Prediction Ratio Summary: 0. .5 .8 1.25 2.

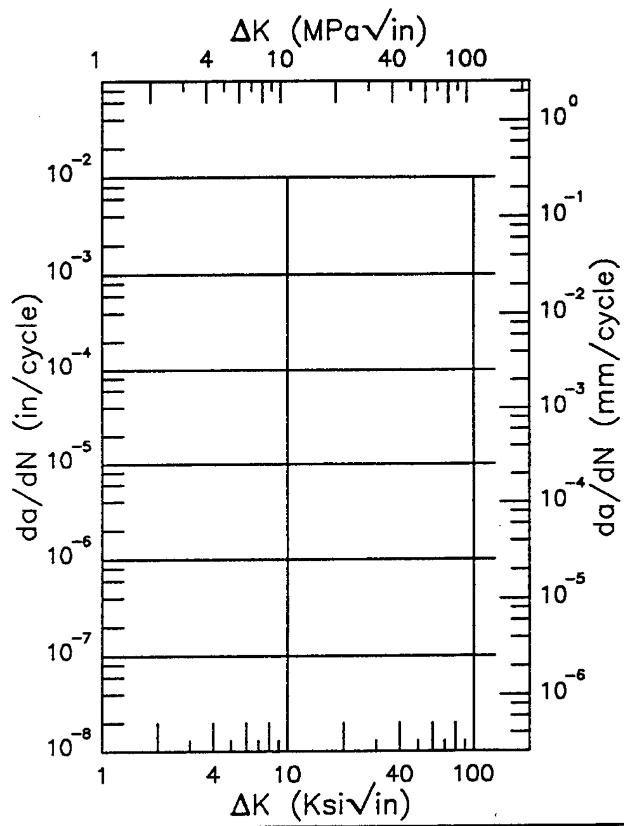
Figure 8.16.3.1.7

Condition/Ht: T736
Form: 4 – 5 in. Forging
Specimen Type: CT
Orientation: T–L
Stress Ratio: 0.33
Frequency: 18.3 Hz

Yield Strength: 59.9 – 60.1 ksi
Ult. Strength: 69.5 – 70.8 ksi
Specimen Thk: 1.501 – 1.502 in.
Specimen Width: 3.8 in.
Ref: 86842

(3 of 3)





ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)
5.96 (min)	6.04
6.	6.11
7.	9.18
8.	13.4
9.	17.1
10.	21.6
13.	51.1
13.62 (max)	73.7

ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)

RMS % Error	Life Prediction Ratio Summary
5.95	0. .5 .8 1.25 2.

RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

Figure 8.16.3.1.7 (Concluded)

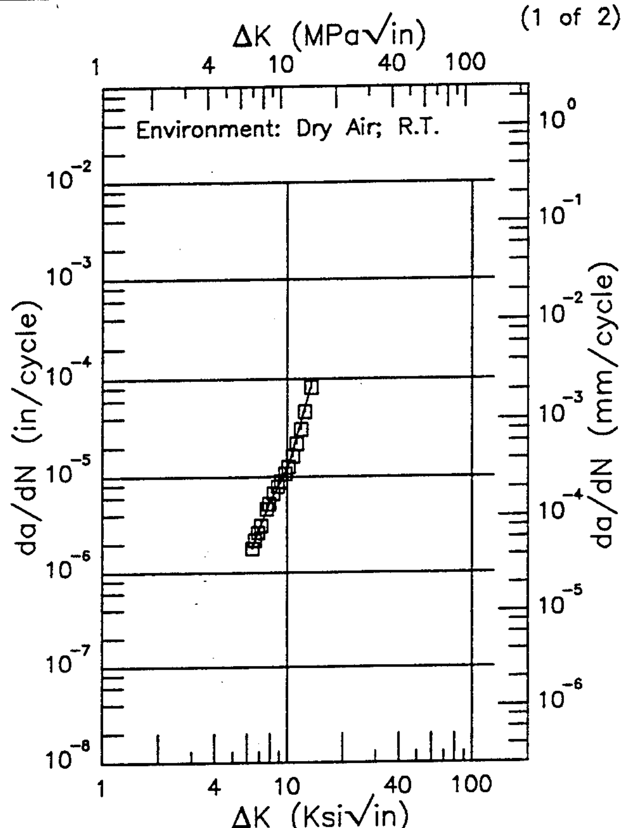
E

7175

Condition/Ht: T736
Form: 5 in. Forging
Specimen Type: CT
Orientation: S–T
Stress Ratio: 0.33
Frequency: 18.3 Hz

Yield Strength: 58.5 ksi
Ult. Strength: 68.9 ksi
Specimen Thk: 1.5 in.
Specimen Width: 3.8 in.
Ref: 86842

(1 of 2)



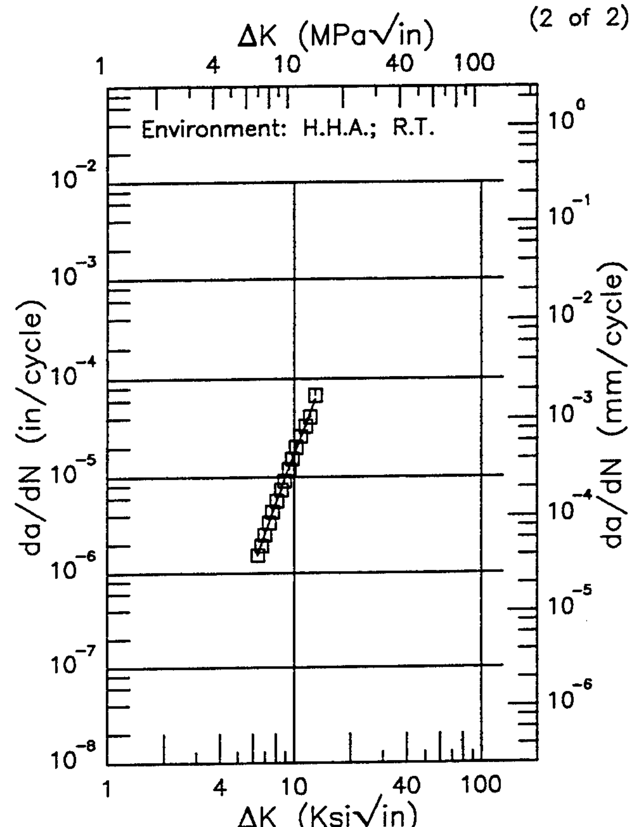
ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
6.41 (min)	1.79
7.	2.81
8.	5.50
9.	8.33
10.	11.9
13.	67.1
13.35 (max)	81.6

RMS % Error 6.29

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

(2 of 2)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
6.38 (min)	1.55
7.	2.55
8.	5.34
9.	10.1
10.	17.1
12.96 (max)	62.9

RMS % Error 4.20

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

Figure 8.16.3.1.8

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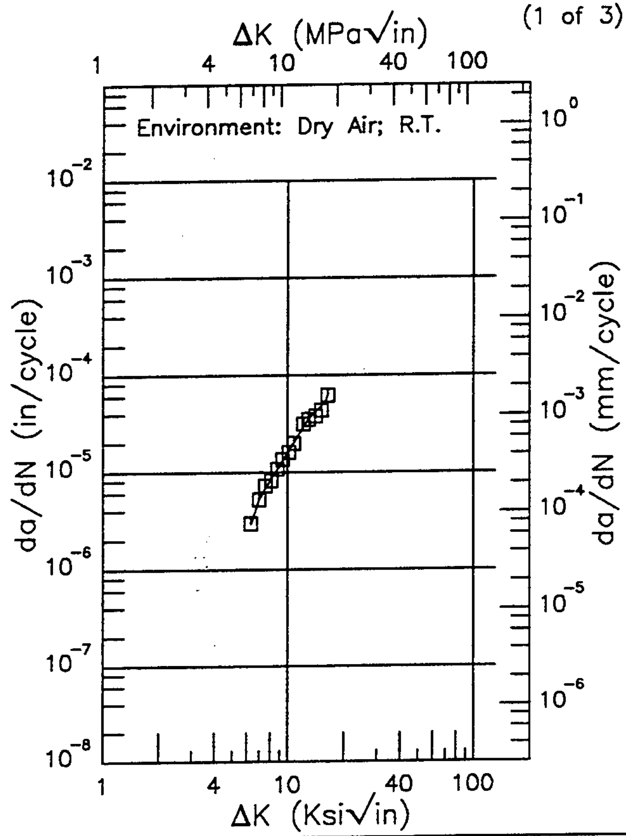
7175

E

Condition/Ht: T736
Form: 5 in. Forging
Specimen Type: CCP (max load specified)
Orientation: L–T
Stress Ratio: 0.33
Frequency: 5.2 Hz

Yield Strength: 62.1 ksi
Ult. Strength: 72.5 ksi
Specimen Thk: 0.744 – 0.747 in.
Specimen Width: 3 in.
Ref: 86842

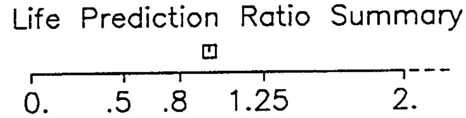
(1 of 3)



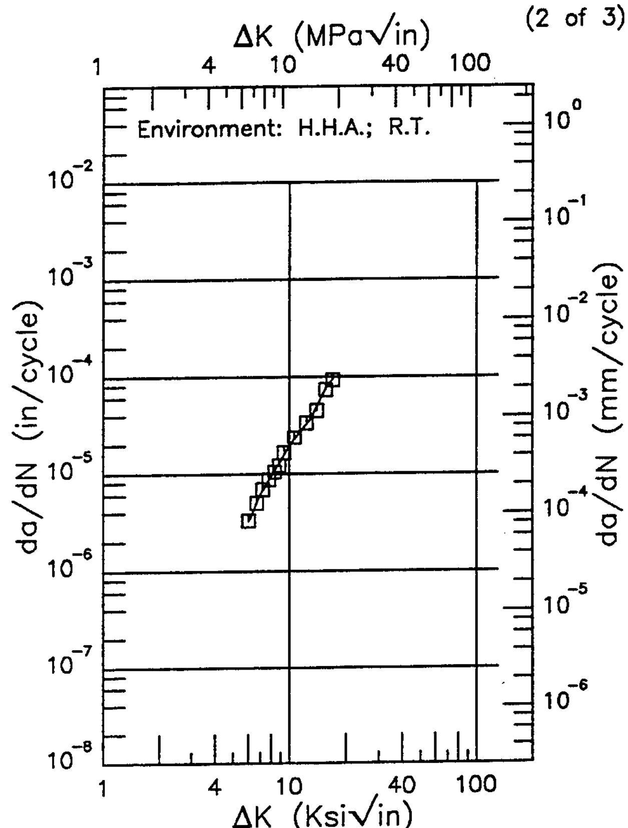
ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
6.32 (min)	2.94
7.	5.27
8.	8.30
9.	11.4
10.	16.0
13.	35.7
16.	54.4
16.26 (max)	61.4

RMS % Error
5.43

Life Prediction Ratio Summary



(2 of 3)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
6.04 (min)	3.26
7.	6.12
8.	9.43
9.	13.7
10.	19.7
13.	36.8
16.	80.9
16.99 (max)	92.0

RMS % Error
3.47

Life Prediction Ratio Summary

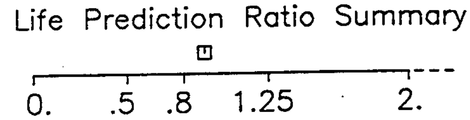
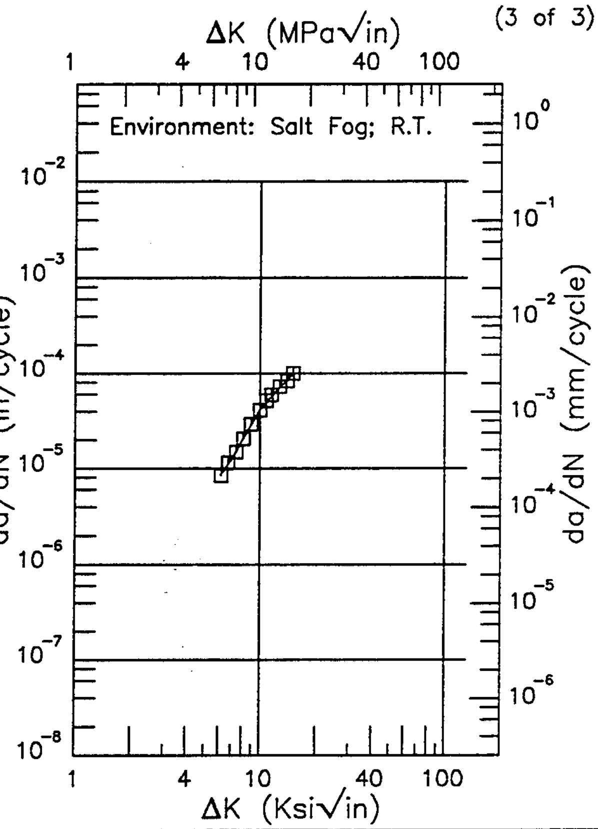


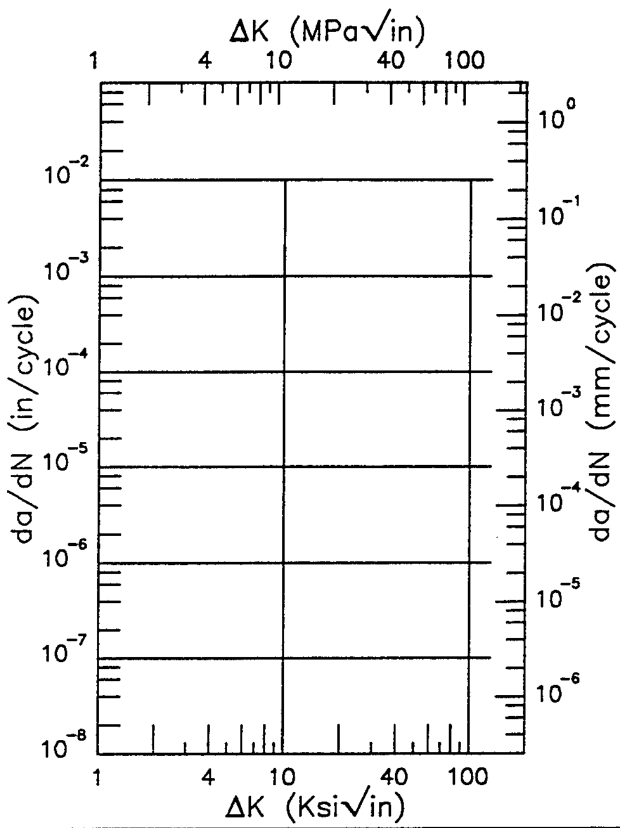
Figure 8.16.3.1.9

Condition/Ht: T736
Form: 5 in. Forging
Specimen Type: CCP (max load specified)
Orientation: L–T
Stress Ratio: 0.33
Frequency: 5.2 Hz

Yield Strength: 62.1 ksi
Ult. Strength: 72.5 ksi
Specimen Thk: 0.744 – 0.747 in.
Specimen Width: 3 in.
Ref: 86842

(3 of 3)





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
6.16 (min)	8.60
7.	12.5
8.	19.7
9.	29.8
10.	41.8
13.	74.3
14.93 (max)	97.0

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error	Life Prediction Ratio Summary
2.57	0. .5 .8 1.25 2.

RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

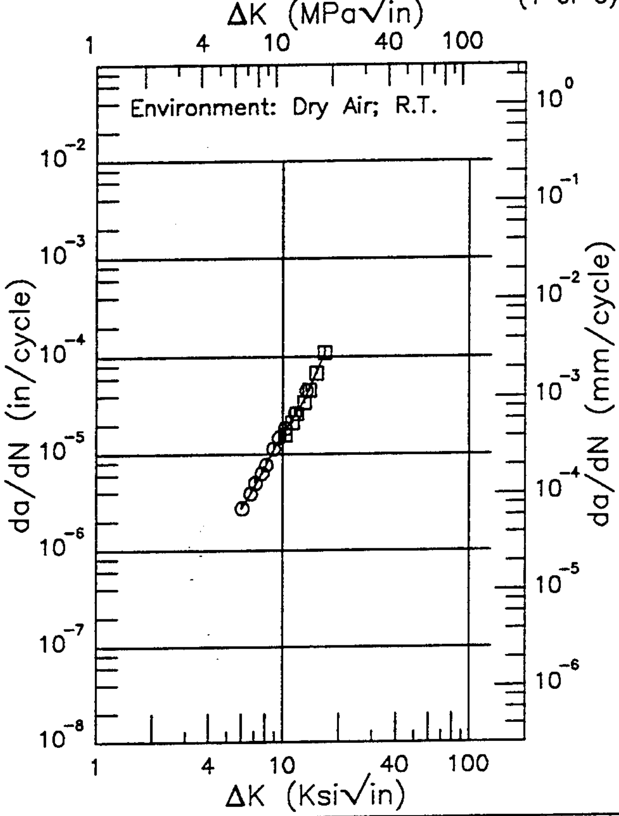
Figure 8.16.3.1.9 (Concluded)

E — 7175

Condition/Ht: T736
Form: 5 in. Forging
Specimen Type: CCP (max load specified)
Orientation: T–L
Stress Ratio: 0.33
Frequency: 5.2 Hz

Yield Strength: 60.1 ksi
Ult. Strength: 69.5 ksi
Specimen Thk: 0.743 – 0.751 in.
Specimen Width: 3 in.
Ref: 86842

(1 of 3)



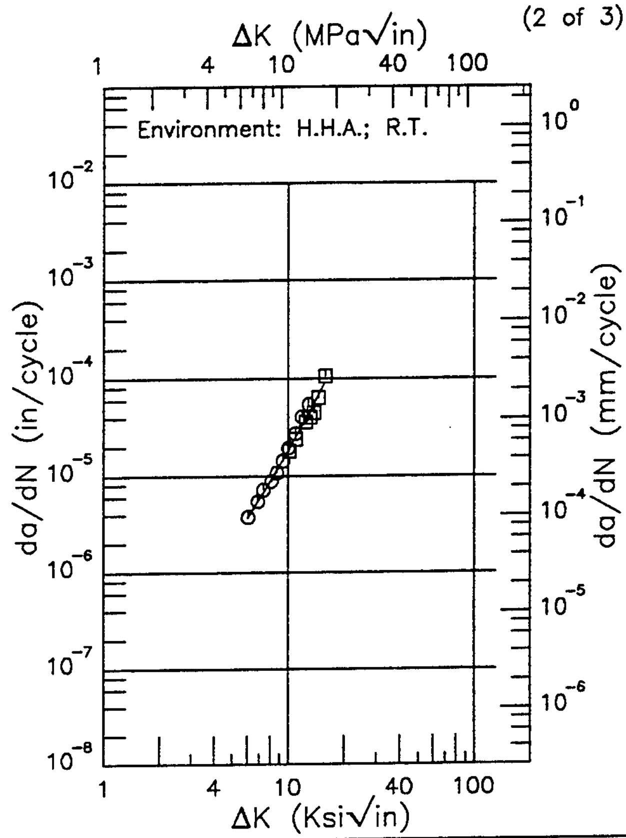
ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
6.02 (min)	2.74
7.	4.50
8.	7.48
9.	11.6
10.	16.2
13.	35.6
16.	89.4
16.71 (max)	108.

RMS % Error 5.40

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

(2 of 3)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
6.07 (min)	3.75
7.	5.78
8.	8.79
9.	12.9
10.	18.2
13.	44.9
15.81 (max)	90.7

RMS % Error 11.72

Life Prediction Ratio Summary

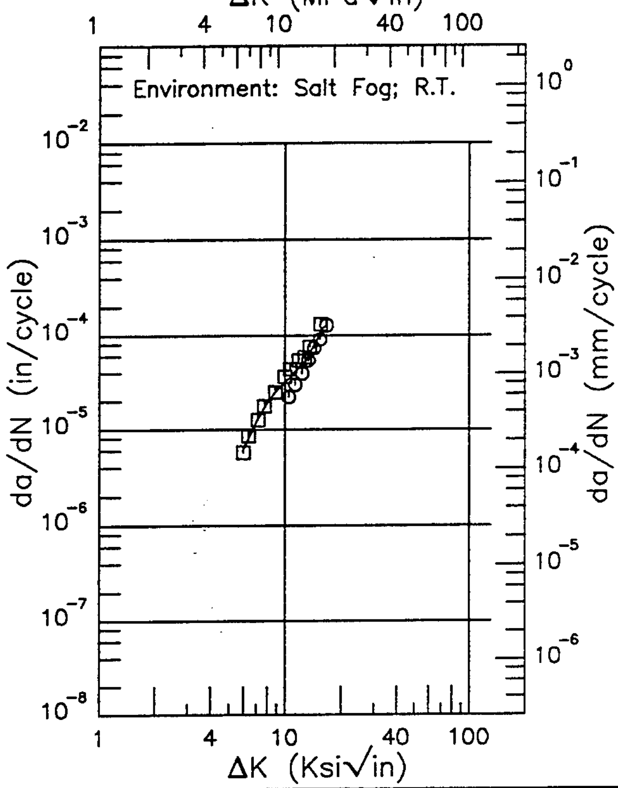
0. .5 .8 1.25 2.

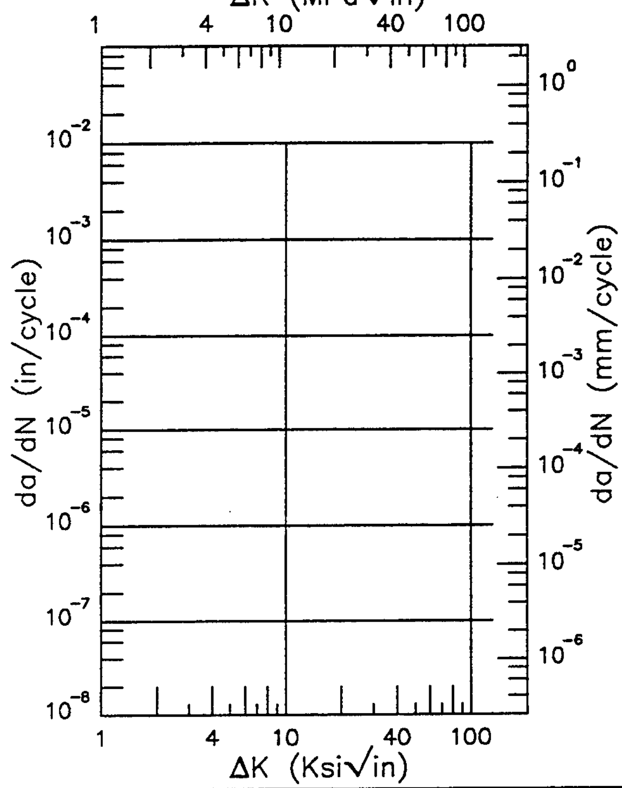
Figure 8.16.3.1.10

Condition/Ht: T736
Form: 5 in. Forging
Specimen Type: CCP (max load specified)
Orientation: T–L
Stress Ratio: 0.33
Frequency: 5.2 Hz

Yield Strength: 60.1 ksi
Ult. Strength: 69.5 ksi
Specimen Thk: 0.743 – 0.751 in.
Specimen Width: 3 in.
Ref: 86842

(3 of 3)



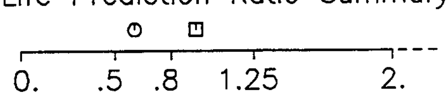


ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
5.94 (min)	6.00
6.	6.29
7.	12.1
8.	19.0
9.	25.8
10.	31.5
13.	54.5
16.	120.
16.59 (max)	128.

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error
16.64

Life Prediction Ratio Summary



RMS % Error

Life Prediction Ratio Summary

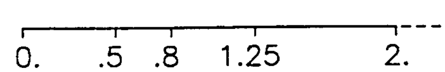


Figure 8.16.3.1.10 (Concluded)

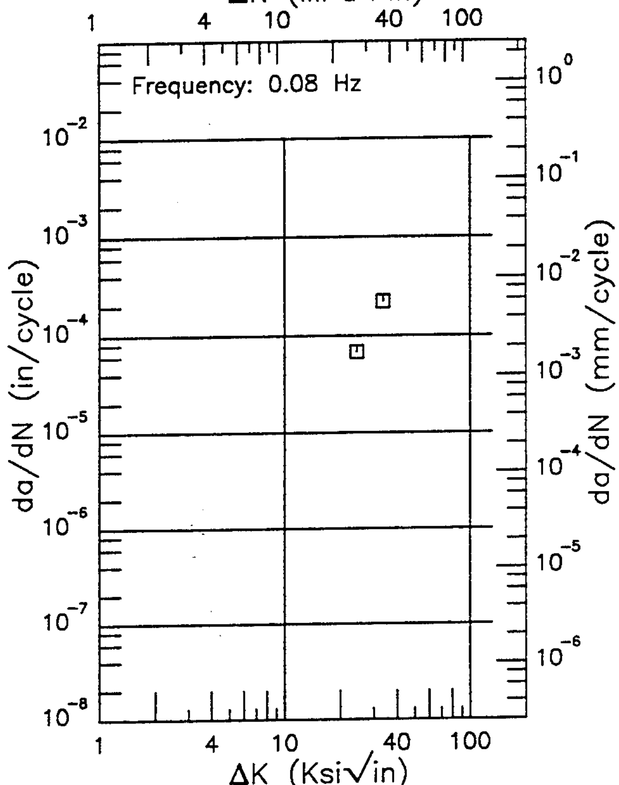
7175

F

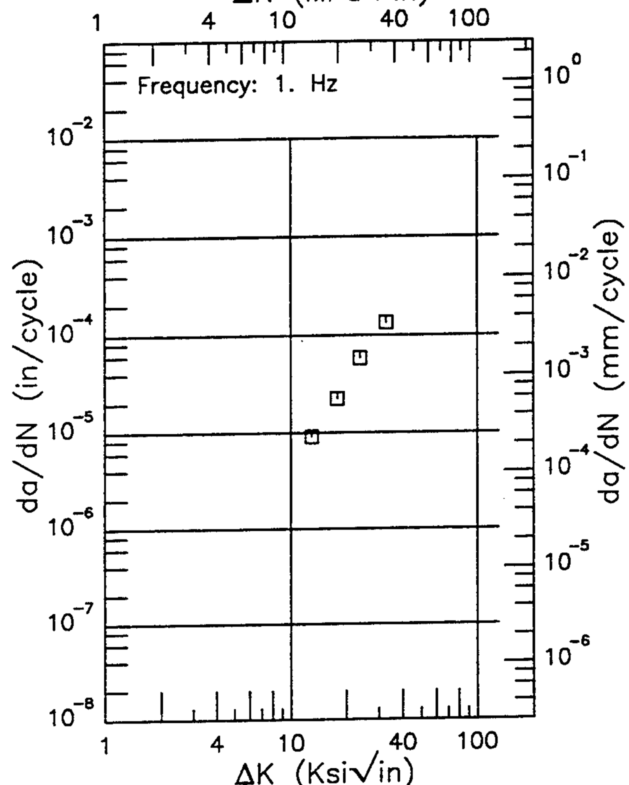
Condition/Ht: T736
Form: 2 in. Forging
Specimen Type: DCB
Orientation: L–T
Stress Ratio: 0.02
Environment: DRY AIR; RT

Yield Strength: 69 – 71 ksi
Ult. Strength: 78 – 79 ksi
Specimen Thk: 0.75 in.
Specimen Width: 5.5 in.
Ref: 84360

(1 of 2)



(2 of 2)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

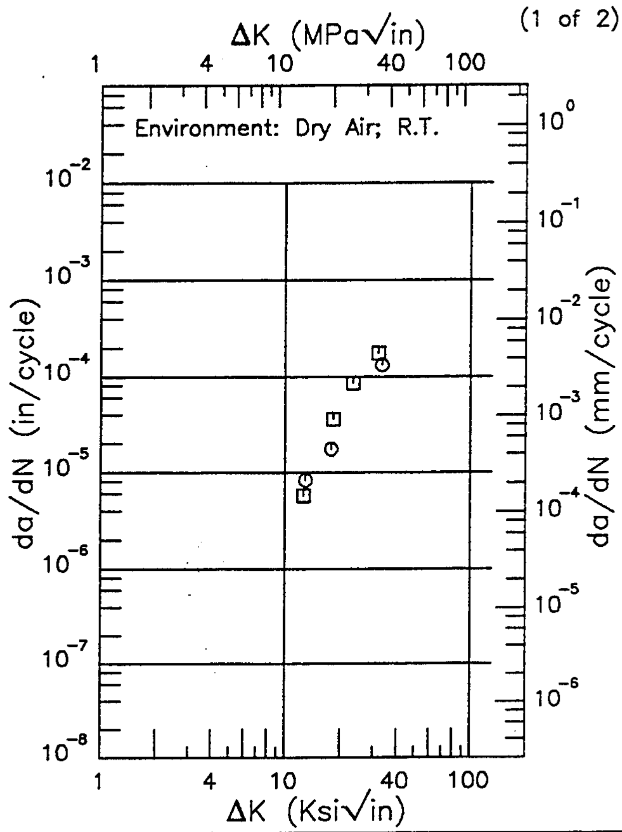
RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

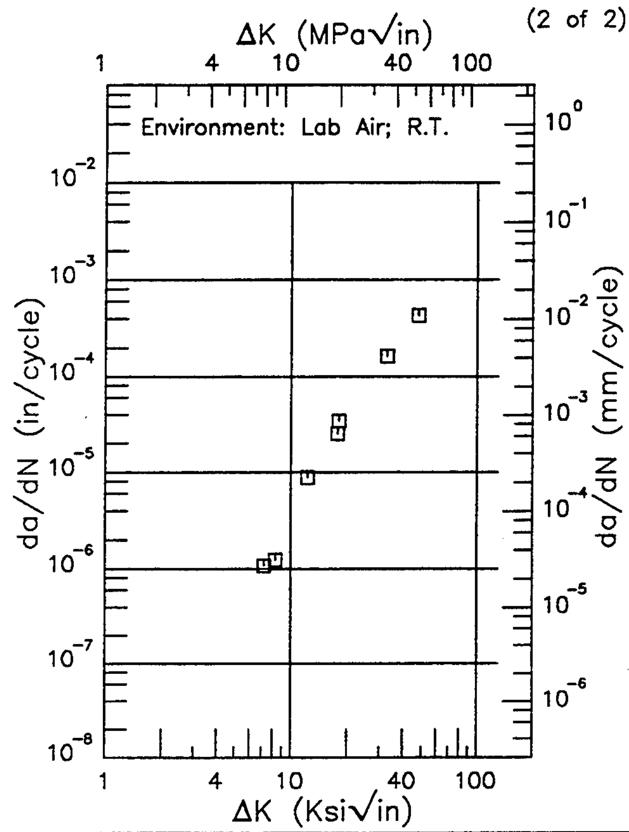
RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

Figure 8.16.3.1.11

Condition/Ht: T736
Form: 2 – 3 in. Forging
Specimen Type: DCB
Orientation: L–T
Stress Ratio: 0.02
Frequency: 10 Hz

Yield Strength: 69 – 71 ksi
Ult. Strength: 78 – 79 ksi
Specimen Thk: 0.75 in.
Specimen Width: 5.5 in.
Ref: 84360





ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)	ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)

RMS % Error	Life Prediction Ratio Summary	RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.		0. .5 .8 1.25 2.

Figure 8.16.3.1.12

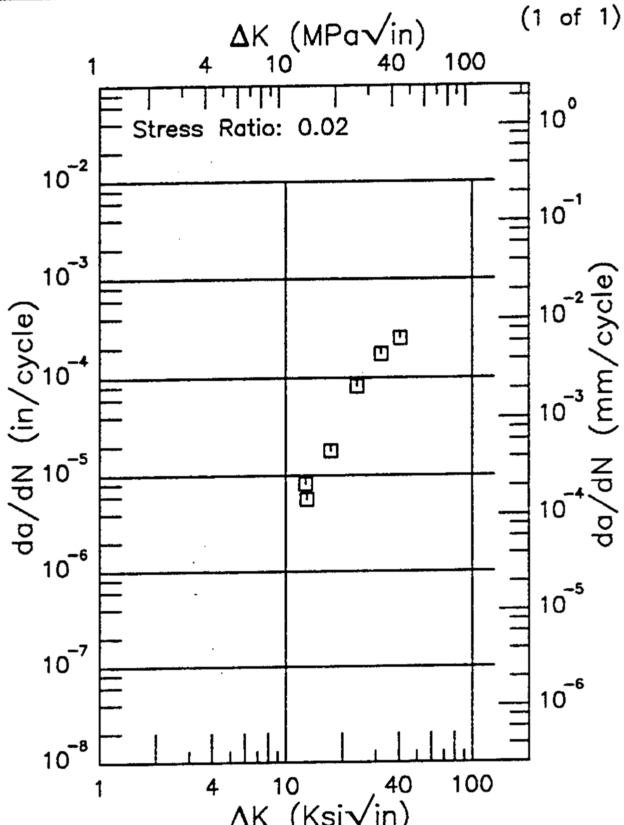
7175

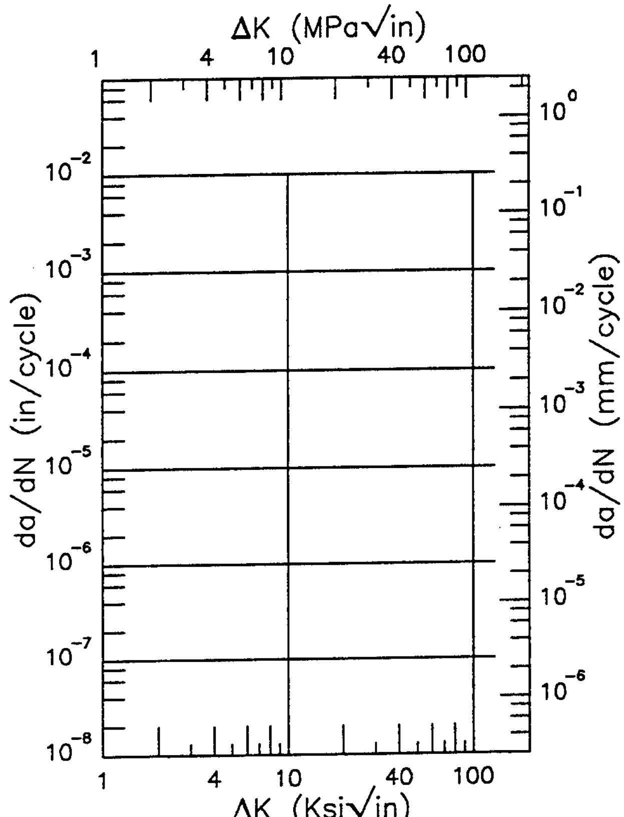
R

Condition/Ht: T736
Form: 3 in. Forging
Specimen Type: DCB
Orientation: L–T
Frequency: 10 Hz
Environment: DRY AIR; RT

Yield Strength: 69.5 ksi
Ult. Strength: 78 ksi
Specimen Thk: 0.625 in.
Specimen Width: 5.5 in.
Ref: 84360

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

RMS % Error

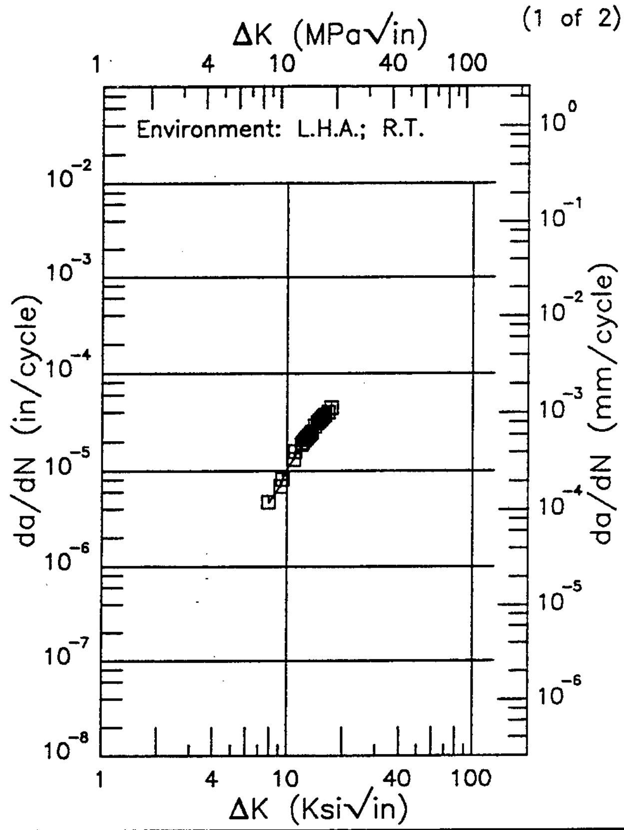
Life Prediction Ratio Summary

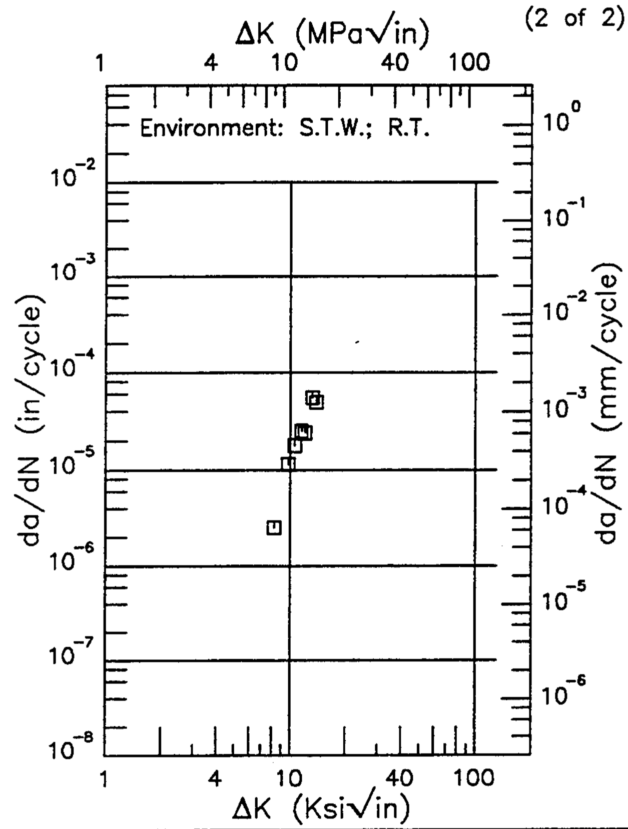
0. .5 .8 1.25 2.

Figure 8.16.3.1.13

Condition/Ht: T73652
Form: Forging
Specimen Type: CT
Orientation: L–T
Stress Ratio: 0.08
Frequency: 0.1 Hz

Yield Strength: 68 ksi
Ult. Strength: 77 ksi
Specimen Thk: 1 in.
Specimen Width: 7.4 in.
Ref: 88579



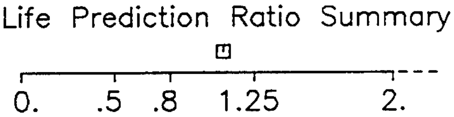


ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)
7.94 (min)	4.66
8.	4.70
9.	6.57
10.	10.3
13.	23.1
16.	37.4
17.28 (max)	43.4

ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)

RMS % Error
3.73

Life Prediction Ratio Summary



RMS % Error

Life Prediction Ratio Summary

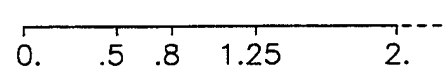


Figure 8.16.3.1.14

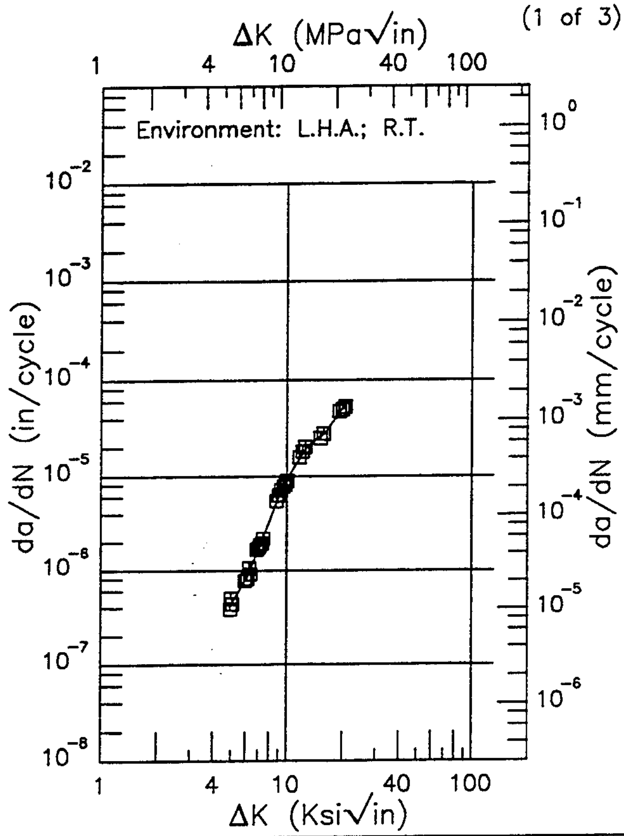
7175

E

Condition/Ht: T73652
Form: Forging
Specimen Type: CT
Orientation: L–T
Stress Ratio: 0.08
Frequency: 1 Hz

Yield Strength: 68 ksi
Ult. Strength: 77 ksi
Specimen Thk: 0.99 – 1 in.
Specimen Width: 7.4 in.
Ref: 88579

(1 of 3)



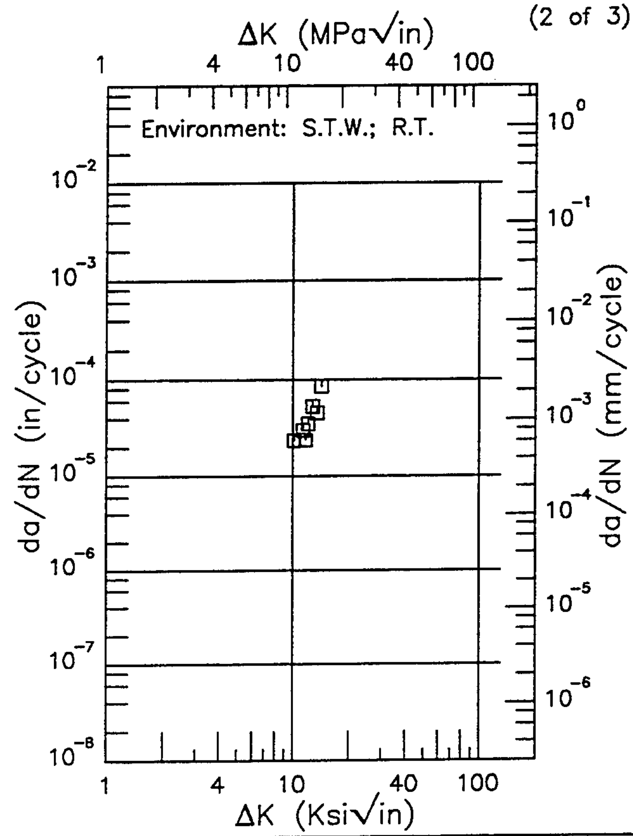
ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
4.93 (min)	0.418
5.	0.432
6.	0.802
7.	1.65
8.	3.27
9.	5.88
10.	9.41
13.	20.8
16.	28.4
20.	51.5
20.53 (max)	52.0

RMS % Error: 6.81

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

(2 of 3)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error

Life Prediction Ratio Summary

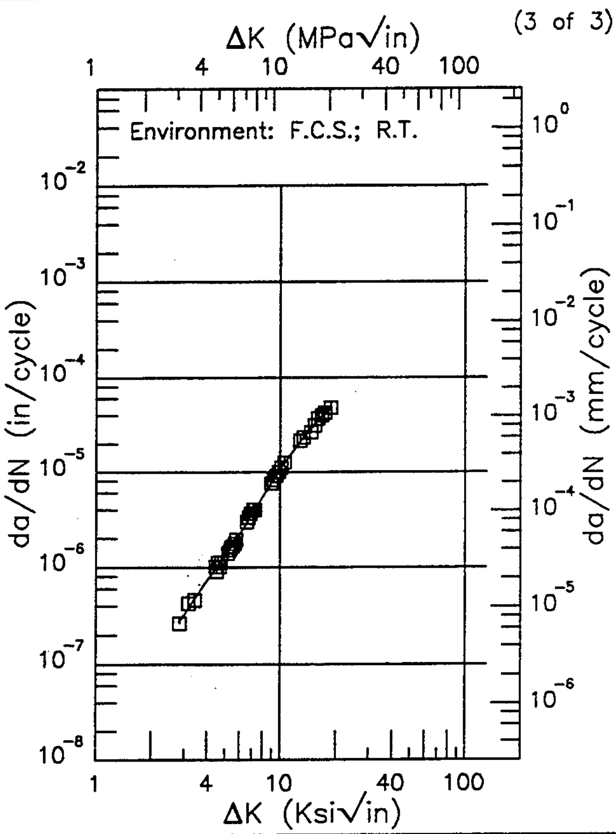
0. .5 .8 1.25 2.

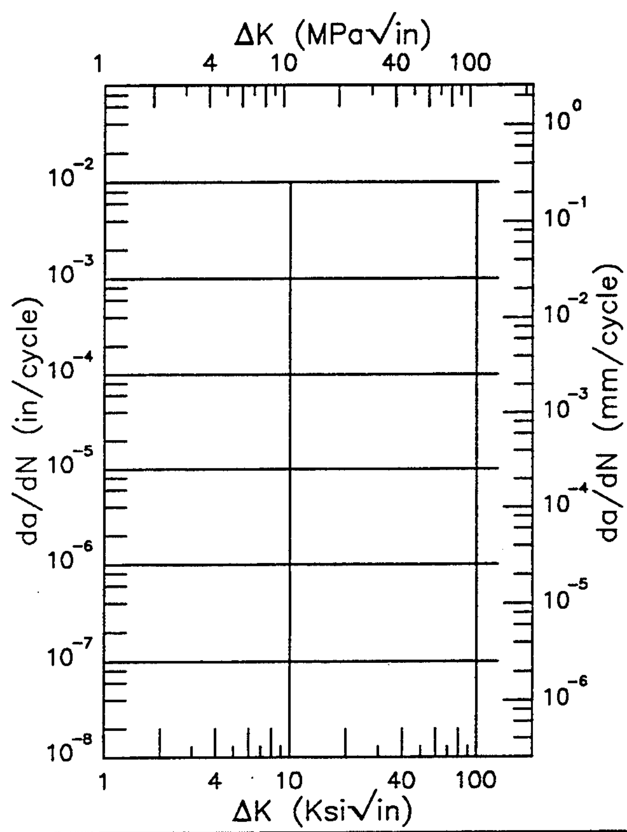
Figure 8.16.3.1.15

Condition/Ht: T73652
Form: Forging
Specimen Type: CT
Orientation: L–T
Stress Ratio: 0.08
Frequency: 1 Hz

Yield Strength: 68 ksi
Ult. Strength: 77 ksi
Specimen Thk: 0.99 – 1 in.
Specimen Width: 7.4 in.
Ref: 88579

(3 of 3)





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
2.82 (min)	0.275
3.	0.328
3.5	0.503
4.	0.721
5.	1.32
6.	2.20
7.	3.51
8.	5.37
9.	7.82
10.	10.8
13.	21.4
16.	35.1
18.66 (max)	47.5

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error	Life Prediction Ratio Summary
5.01	0. .5 .8 1.25 2.

RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

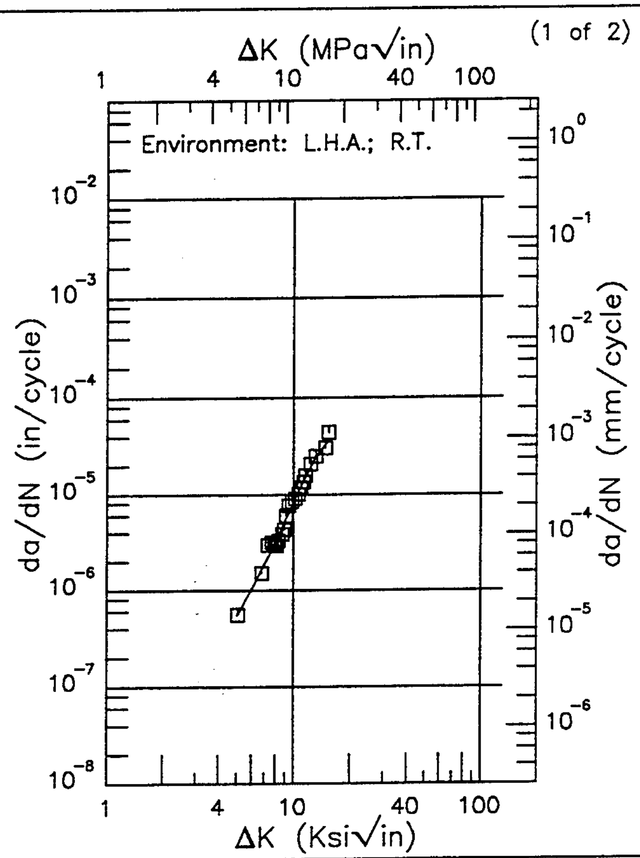
Figure 8.16.3.1.15 (Concluded)

E — 7175

Condition/Ht: T73652
Form: 6 in. Forging
Specimen Type: CT
Orientation: L—T
Stress Ratio: 0.08
Frequency: 6 Hz

Yield Strength: 68 – 70 ksi
Ult. Strength: 77 – 80 ksi
Specimen Thk: 0.99 – 0.998 in.
Specimen Width: 7.4 in.
Ref: 85837;88579

(1 of 2)

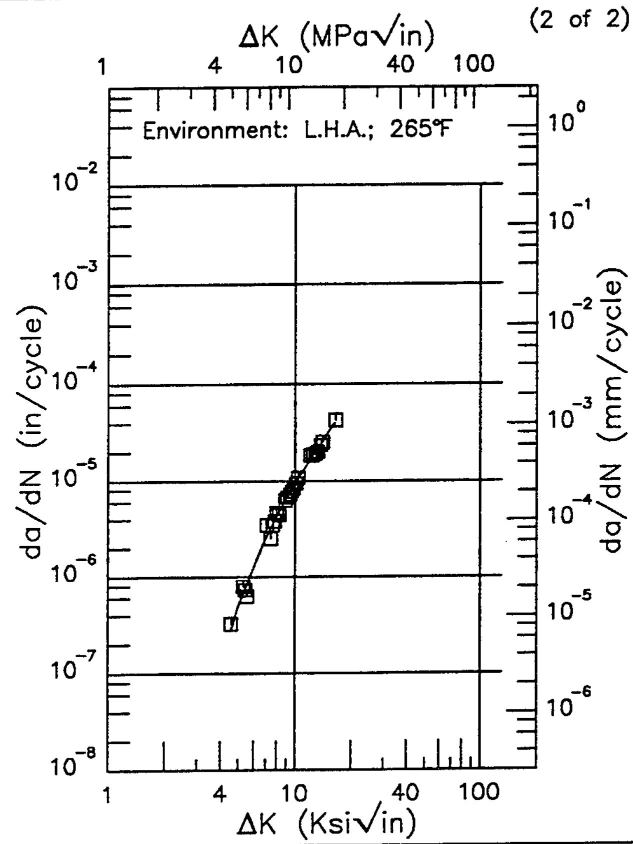


ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
5.05 (min)	0.548
6.	1.02
7.	1.85
8.	3.18
9.	5.31
10.	8.49
13.	23.6
15.25 (max)	36.1

RMS % Error: 12.88

Life Prediction Ratio Summary: 0. .5 .8 1.25 2.

(2 of 2)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
4.56 (min)	0.289
5.	0.492
6.	1.26
7.	2.53
8.	4.33
9.	6.65
10.	9.49
13.	21.0
16.	37.4
16.44 (max)	40.2

RMS % Error: 11.38

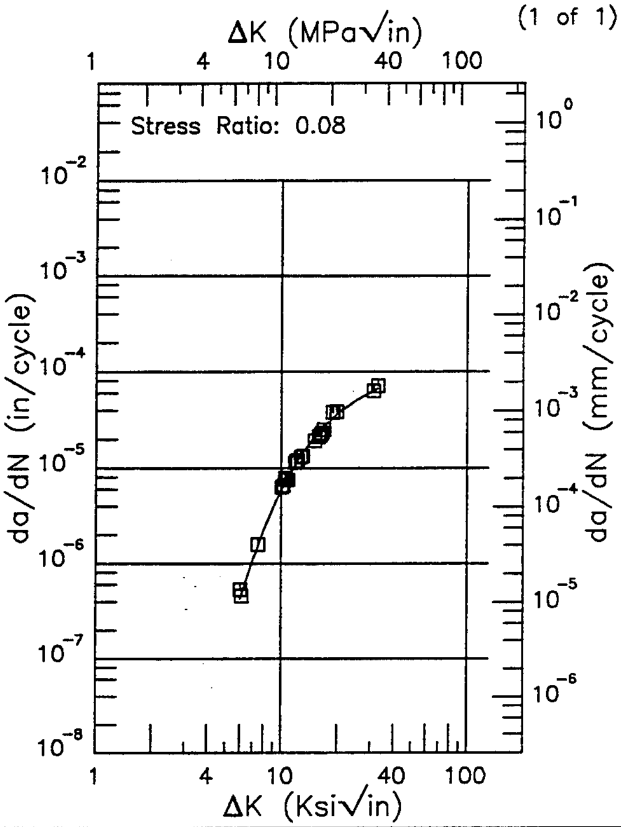
Life Prediction Ratio Summary: 0. .5 .8 1.25 2.

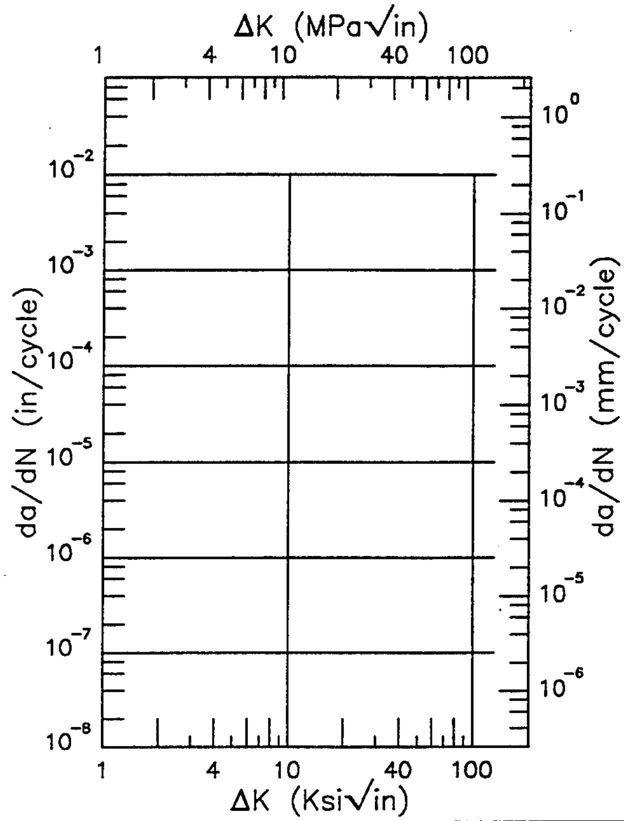
Figure 8.16.3.1.16

Condition/Ht: T73652
Form: Forging
Specimen Type: CT
Orientation: L-T
Frequency: 6 Hz
Environment: L.H.A.; RT

Yield Strength: 68 ksi
Ult. Strength: 77 ksi
Specimen Thk: 0.5 in.
Specimen Width: 7.4 in.
Ref: 88579

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
6.02 (min)	0.421
7.	1.07
8.	2.19
9.	3.81
10.	5.92
13.	14.4
16.	24.2
20.	36.8
25.	50.3
30.	61.4
32.75 (max)	66.8

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error	Life Prediction Ratio Summary
9.51	0. .5 .8 1.25 2.

RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

Figure 8.16.3.1.17

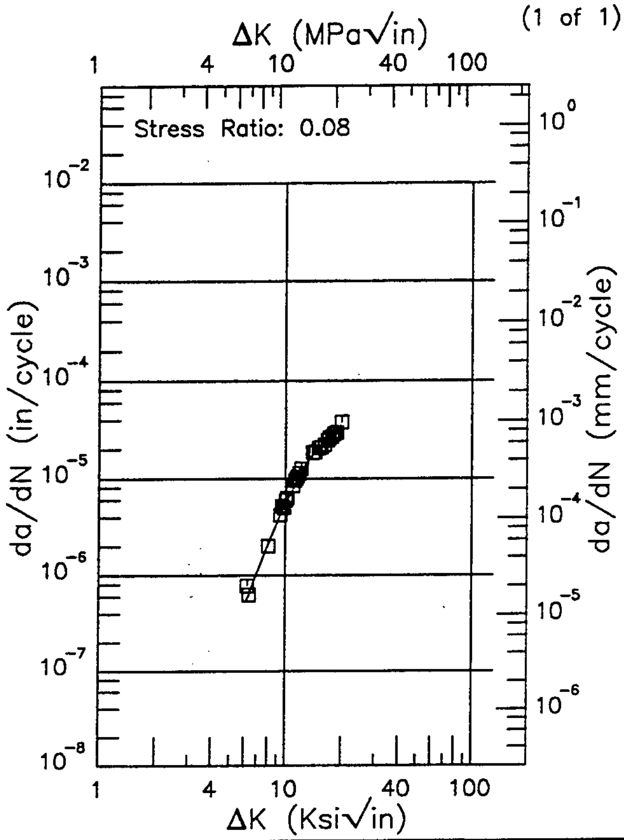
⊣ 7175 ⊢

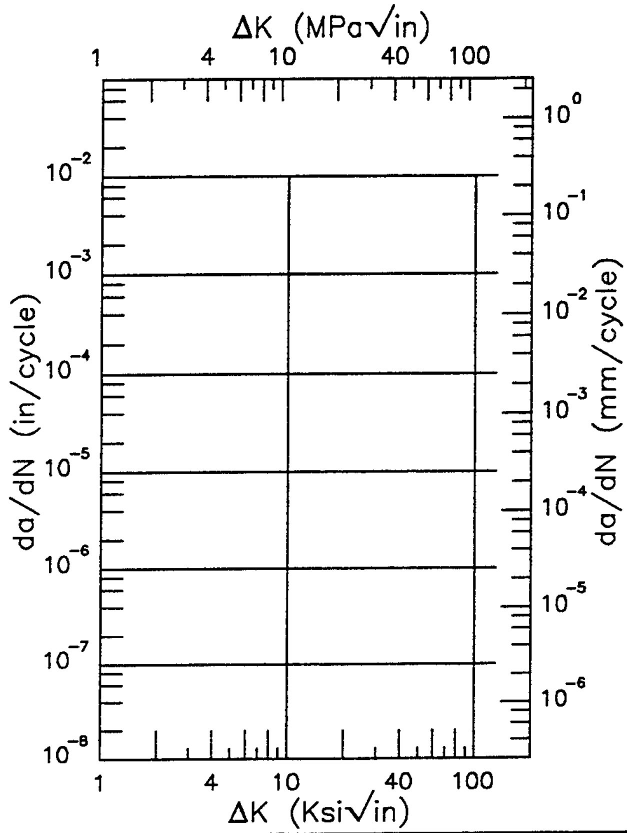
R

Condition/Ht: T73652
Form: Forging
Specimen Type: CT
Orientation: L–T
Frequency: 6 Hz
Environment: L.H.A.; RT

Yield Strength: 68 ksi
Ult. Strength: 77 ksi
Specimen Thk: 0.25 in.
Specimen Width: 7.4 in.
Ref: 88579

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
6.20 (min)	0.554
7.	1.06
8.	2.07
9.	3.60
10.	5.67
13.	14.5
16.	24.1
19.86 (max)	31.3

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error
10.87

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

RMS % Error

Life Prediction Ratio Summary

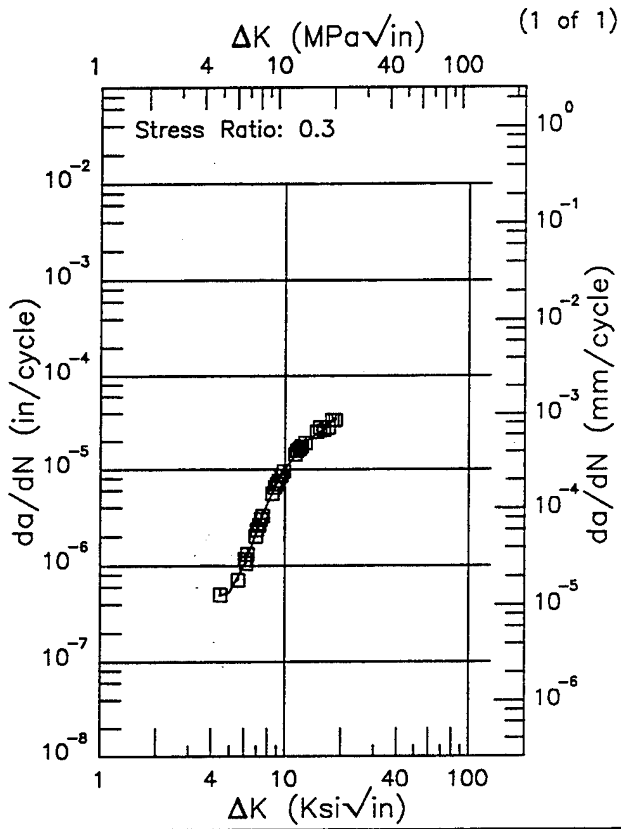
0. .5 .8 1.25 2.

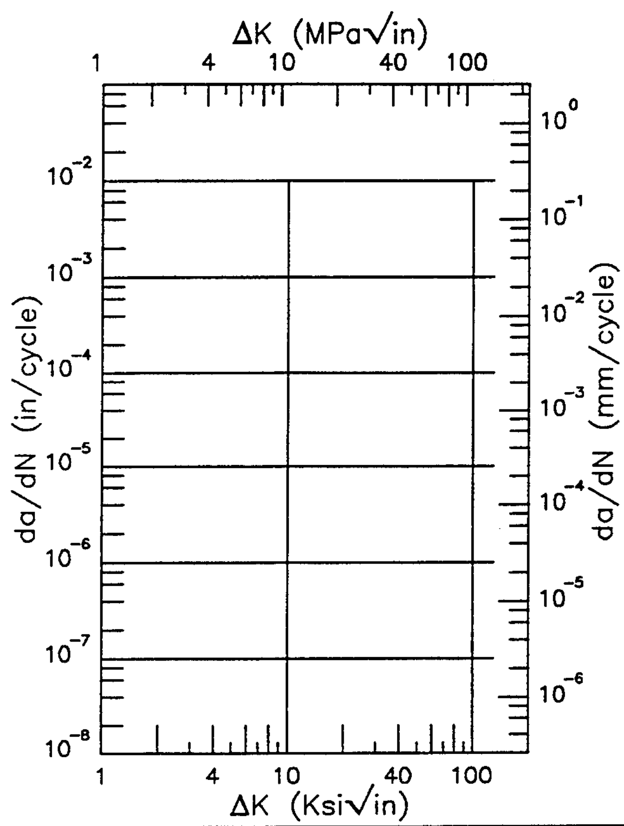
Figure 8.16.3.1.18

Condition/Ht: T73652
Form: Forging
Specimen Type: CT
Orientation: L–T
Frequency: 6 Hz
Environment: L.H.A.; RT

Yield Strength: 68 ksi
Ult. Strength: 77 ksi
Specimen Thk: 1 in.
Specimen Width: 7.4 in.
Ref: 88579

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
4.45 (min)	0.498
5.	0.533
6.	1.01
7.	2.21
8.	4.34
9.	7.08
10.	10.1
13.	20.1
16.	26.8
18.40 (max)	35.0

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error
4.66

Life Prediction Ratio Summary
0. .5 .8 1.25 2.

RMS % Error

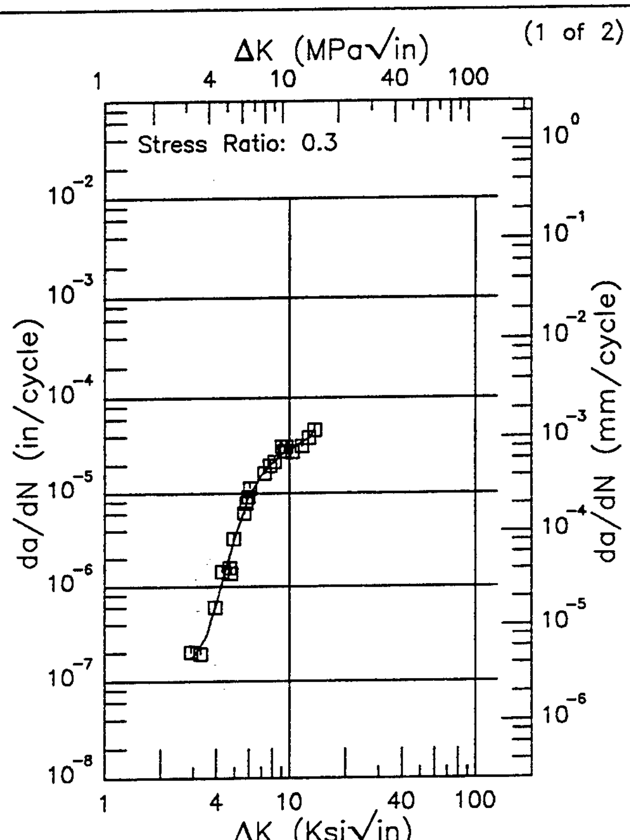
Life Prediction Ratio Summary
0. .5 .8 1.25 2.

Figure 8.16.3.1.19

R 7175

Condition/Ht: T73652	Yield Strength: 68 ksi
Form: Forging	Ult. Strength: 77 ksi
Specimen Type: CT	Specimen Thk: 1 in.
Orientation: L–T	Specimen Width: 7.4 in.
Frequency: 1 Hz	Ref: 88579
Environment: S.T.W.; RT	

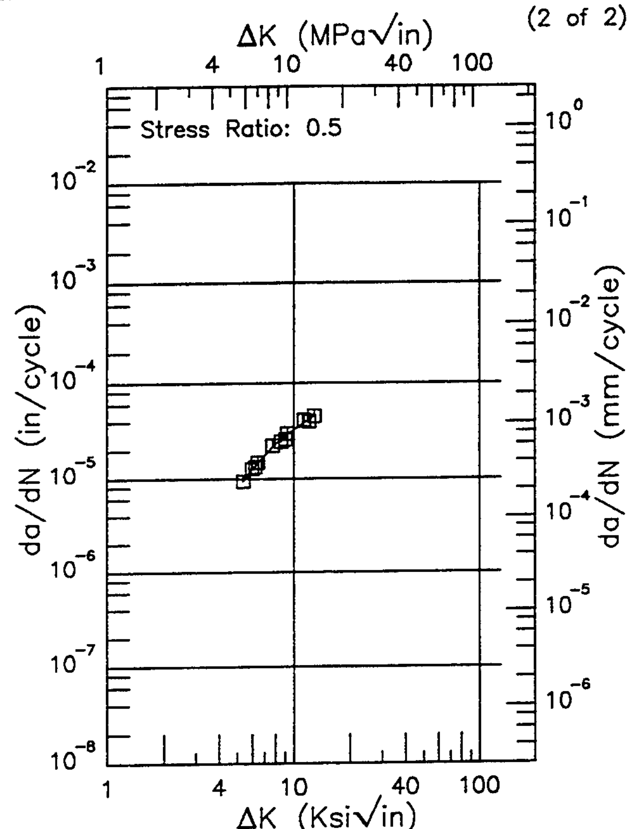
(1 of 2)



ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)
2.91 (min)	0.176
3.	0.178
3.5	0.285
4.	0.640
5.	3.24
6.	9.28
7.	15.7
8.	20.9
9.	25.6
10.	29.4
13.	39.1
13.55 (max)	47.5

RMS % Error	Life Prediction Ratio Summary
15.36	0. .5 .8 1.25 2.

(2 of 2)



ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)
5.36 (min)	9.41
6.	12.6
7.	17.8
8.	23.1
9.	28.3
10.	33.3
12.77 (max)	45.5

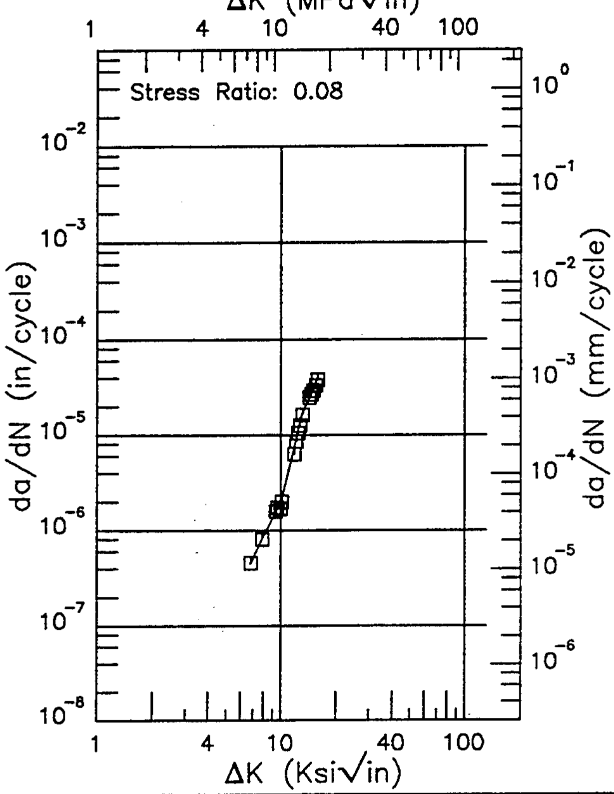
RMS % Error	Life Prediction Ratio Summary
4.30	0. .5 .8 1.25 2.

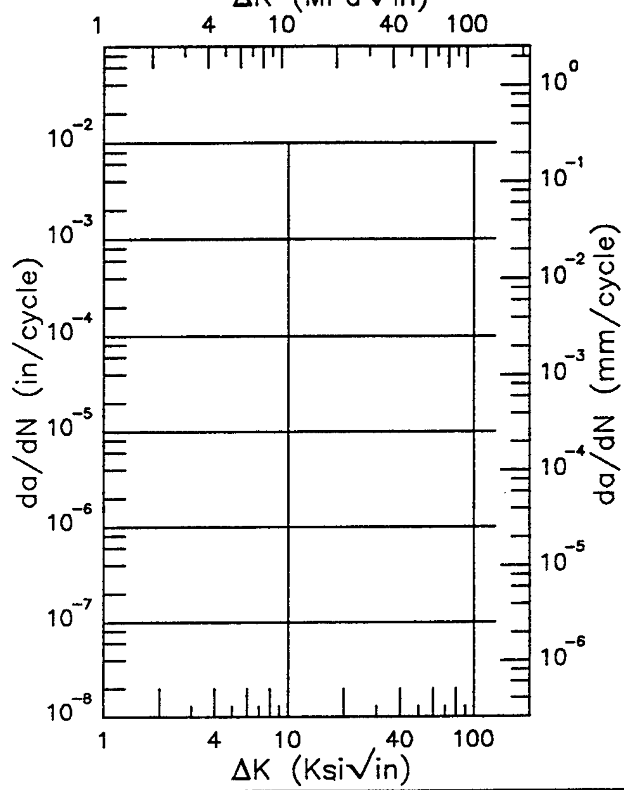
Figure 8.16.3.1.20

Condition/Ht: T73652
Form: Forging
Specimen Type: CT
Orientation: T-L
Frequency: 6 Hz
Environment: L.H.A.; RT

Yield Strength: 64 ksi
Ult. Strength: 74 ksi
Specimen Thk: 1 in.
Specimen Width: 7.4 in.
Ref: 88579

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
6.81 (min)	0.449
7.	0.507
8.	0.873
9.	1.33
10.	1.95
13.	15.9
15.77 (max)	39.0

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error	Life Prediction Ratio Summary
5.86	0. .5 .8 1.25 2.

RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

Figure 8.16.3.1.21

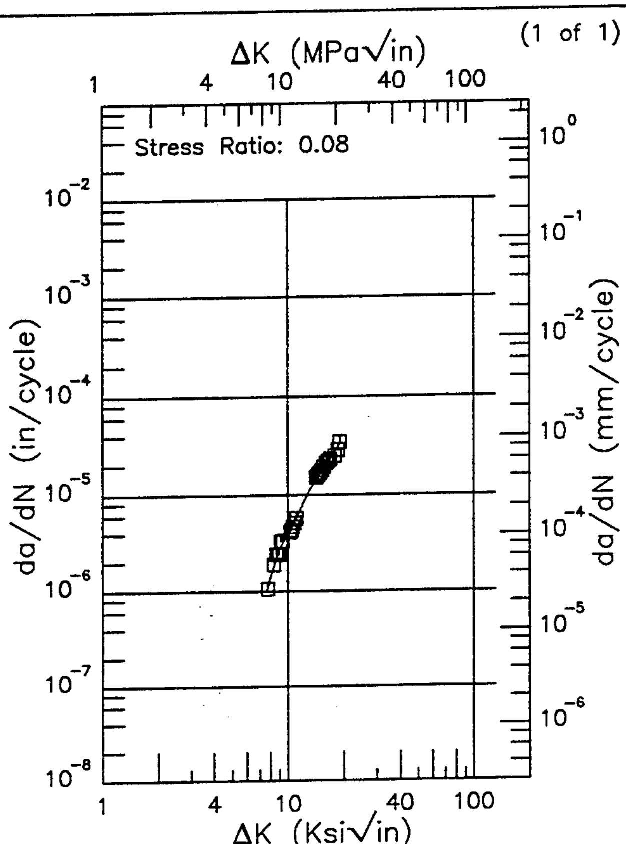
R

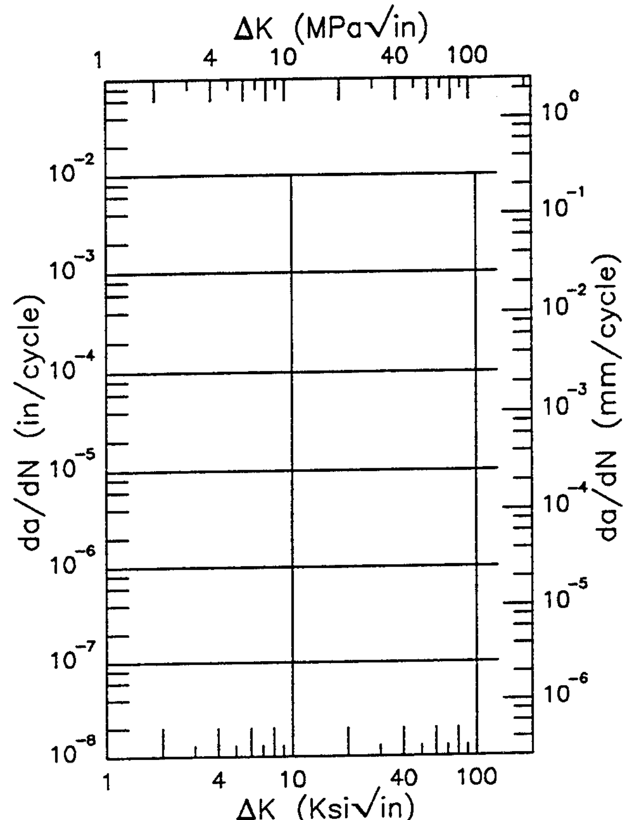
7175

Condition/Ht: T73652
Form: Forging
Specimen Type: CT
Orientation: T–L
Frequency: 6 Hz
Environment: L.H.A.; RT

Yield Strength: 64 ksi
Ult. Strength: 74 ksi
Specimen Thk: 0.5 in.
Specimen Width: 7.4 in.
Ref: 88579

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
7.73 (min)	1.04
8.	1.41
9.	2.79
10.	3.97
13.	10.9
16.	20.6
18.99 (max)	33.6

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

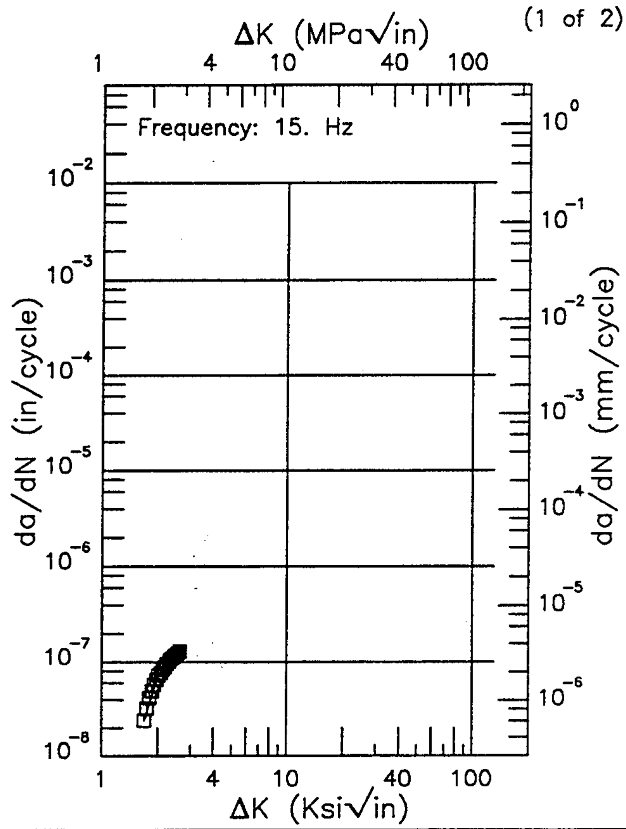
RMS % Error	Life Prediction Ratio Summary
5.74	0. .5 .8 1.25 2.

RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

Figure 8.16.3.1.22

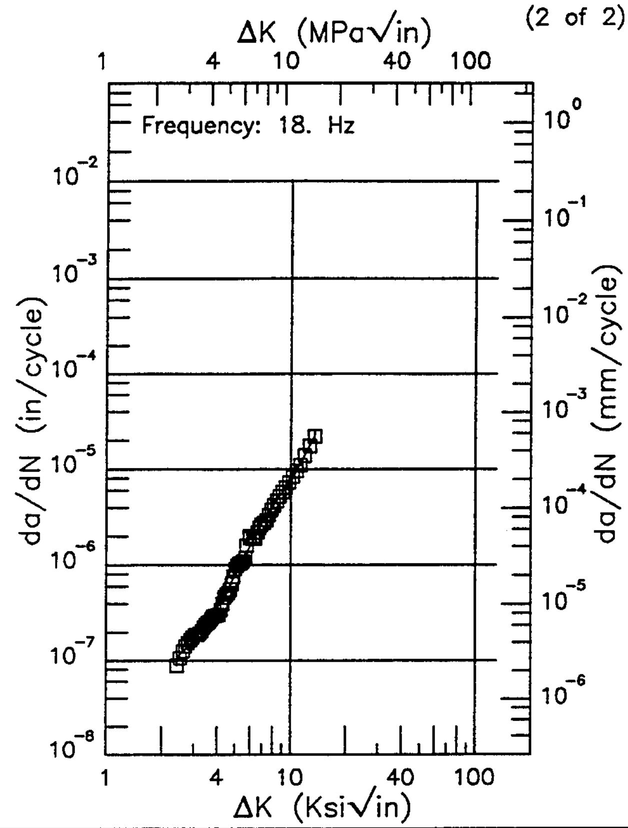
Condition/Ht: T73652
Form: Forging
Specimen Type: CCP (max load specified)
Orientation: L-T
Stress Ratio: 0.02
Environment: LAB AIR; RT

Yield Strength: 71.7 ksi
Ult. Strength: 81.5 ksi
Specimen Thk: 0.107 – 0.11 in.
Specimen Width: 3.947 – 3.951 in.
Ref: MA002



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
1.69 (min)	0.0239
2.	0.0702
2.5	0.119
2.61 (max)	0.126

RMS % Error	Life Prediction Ratio Summary
7.45	0. .5 .8 1.25 2.



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
2.41 (min)	0.109
2.5	0.115
3.	0.163
3.5	0.239
4.	0.354
5.	0.764
6.	1.55
7.	2.75
8.	4.21
9.	5.69
10.	7.48
13.	19.2
13.43 (max)	21.3

RMS % Error	Life Prediction Ratio Summary
9.78	0. .5 .8 1.25 2.

Figure 8.16.3.1.23

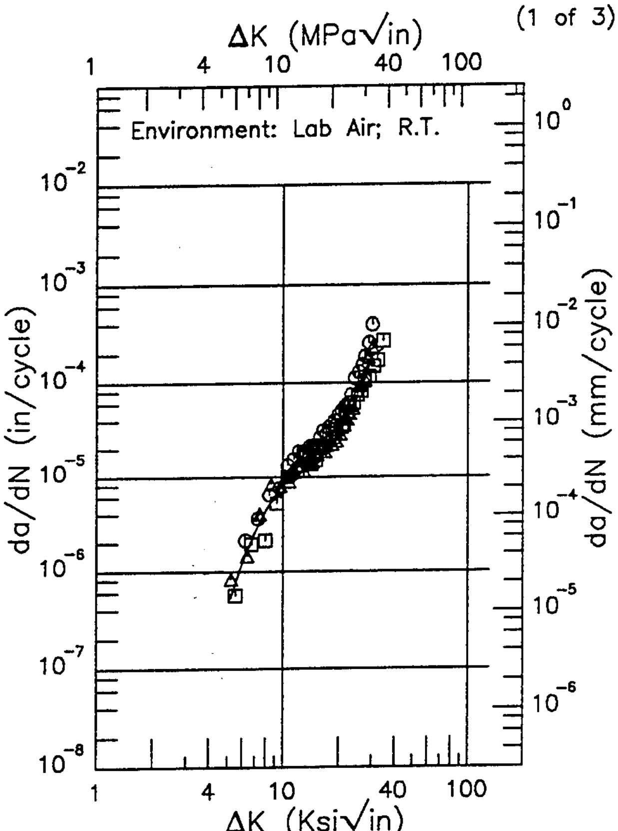
E

7175

Condition/Ht: T73652
Form: 1.25 in. Forging
Specimen Type: WOL
Orientation: L-T
Stress Ratio: 0.02
Frequency: 0.1 – 20 Hz

Yield Strength: 66.3 – 70.3 ksi
Ult. Strength: 76.8 – 79.3 ksi
Specimen Thk: 1.25 in.
Specimen Width: 5 in.
Ref: MA005

(1 of 3)



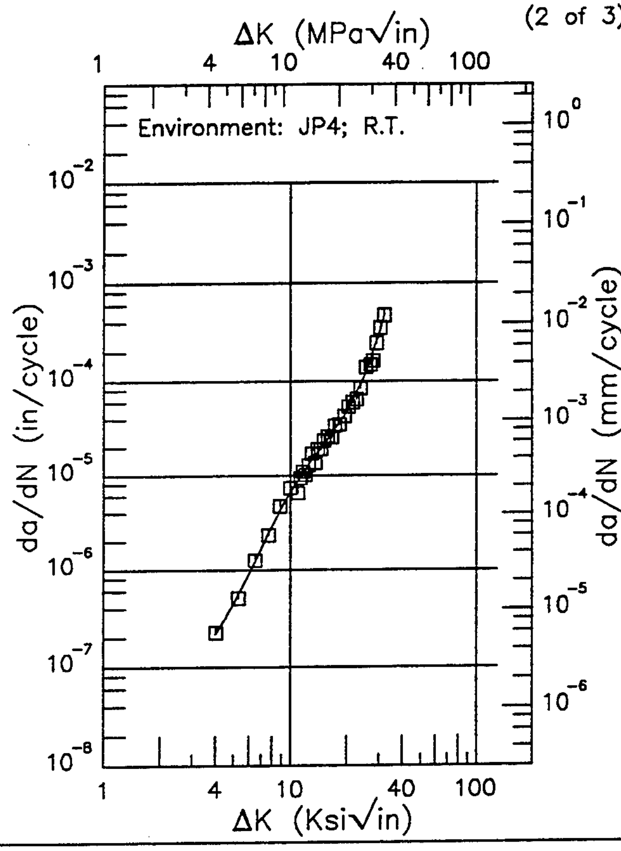
ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
5.21 (min)	0.522
6.	1.23
7.	2.59
8.	4.34
9.	6.32
10.	8.39
13.	14.8
16.	22.2
20.	37.5
25.	84.3
30.	188.
34.62 (max)	224.

RMS % Error
25.59

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

(2 of 3)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
4.00 (min)	0.218
5.	0.442
6.	0.889
7.	1.67
8.	2.87
9.	4.55
10.	6.67
13.	14.5
16.	24.6
20.	47.6
25.	113.
30.	299.
31.92 (max)	482.

RMS % Error
10.33

Life Prediction Ratio Summary

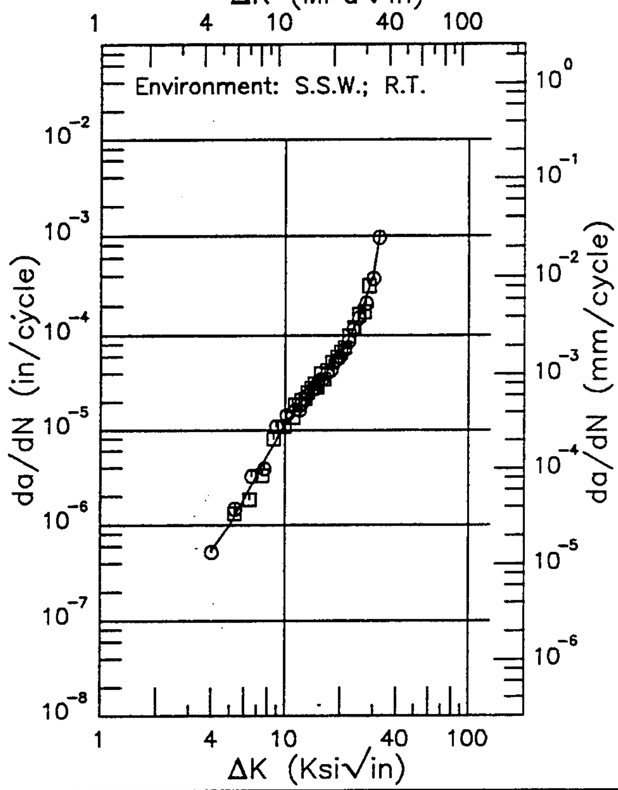
0. .5 .8 1.25 2.

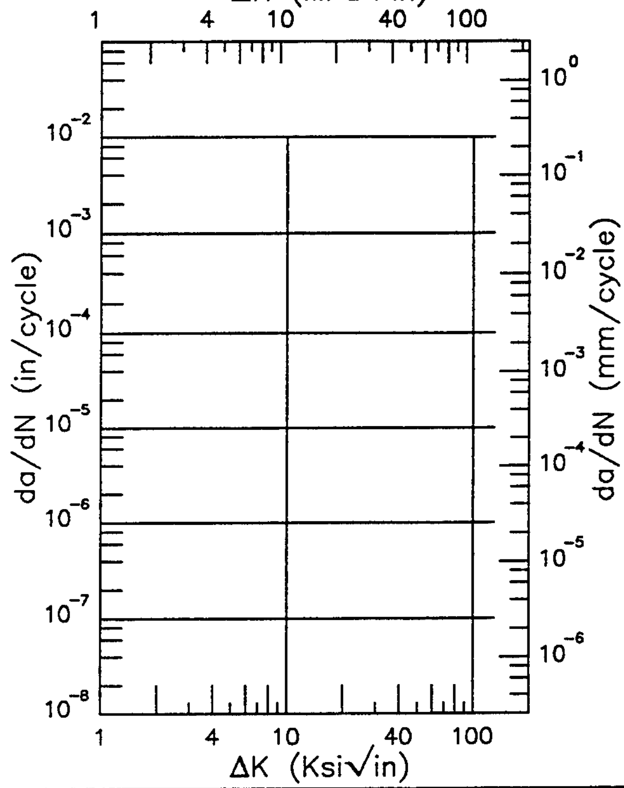
Figure 8.16.3.1.24

Condition/Ht: T73652
Form: 1.25 in. Forging
Specimen Type: WOL
Orientation: L-T
Stress Ratio: 0.02
Frequency: 0.1 – 20 Hz

Yield Strength: 66.3 – 70.3 ksi
Ult. Strength: 76.8 – 79.3 ksi
Specimen Thk: 1.25 in.
Specimen Width: 5 in.
Ref: MA005

(3 of 3)





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
3.99 (min)	0.537
4.	0.540
5.	1.00
6.	1.88
7.	3.32
8.	5.44
9.	8.26
10.	11.7
13.	23.1
16.	36.4
20.	66.4
25.	145.
30.	402.
32.21 (max)	922.

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error
10.90

Life Prediction Ratio Summary
0. .5 .8 1.25 2.

RMS % Error

Life Prediction Ratio Summary
0. .5 .8 1.25 2.

Figure 8.16.3.1.24 (Concluded)

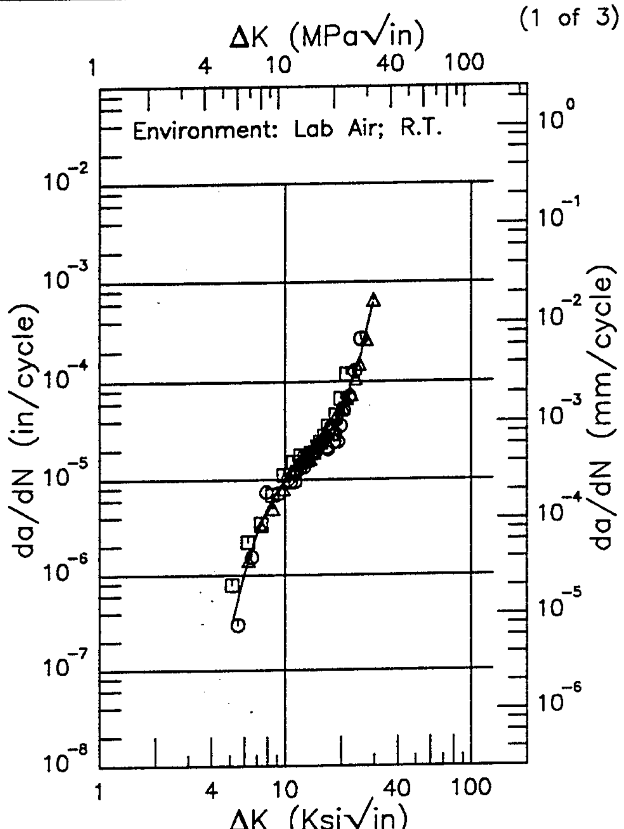
E

7175

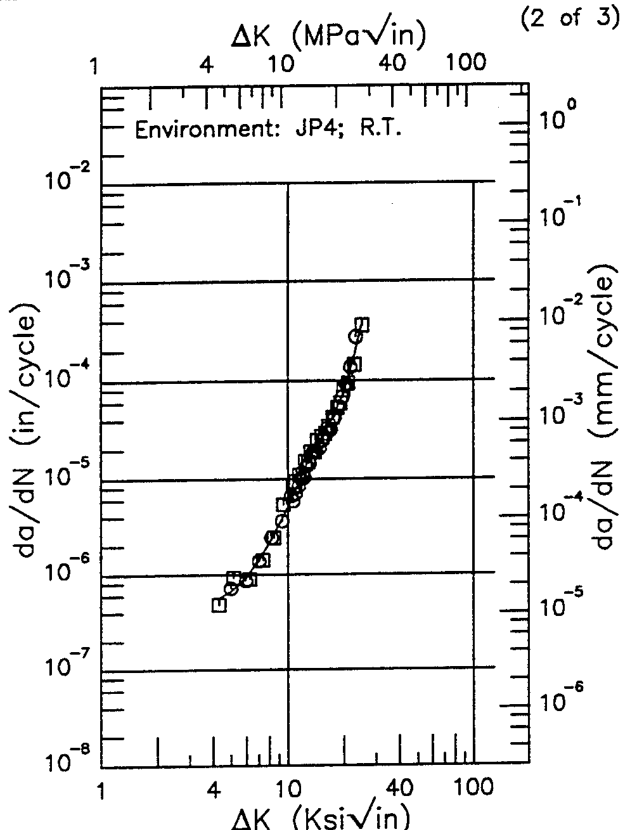
Condition/Ht: T73652
Form: 1.25 in. Forging
Specimen Type: WOL
Orientation: T–L
Stress Ratio: 0.02
Frequency: 1 – 20 Hz

Yield Strength: 59 – 63.5 ksi
Ult. Strength: 70 – 72.3 ksi
Specimen Thk: 1.25 in.
Specimen Width: 5 in.
Ref: MA005

(1 of 3)



(2 of 3)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
5.14 (min)	0.296
6.	1.04
7.	2.68
8.	4.98
9.	7.56
10.	10.1
13.	16.5
16.	24.3
20.	50.3
25.	166.
29.64 (max)	618.

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
4.29 (min)	0.567
5.	0.673
6.	0.946
7.	1.41
8.	2.16
9.	3.35
10.	5.18
13.	15.9
16.	30.6
20.	74.9
25.	358.
25.04 (max)	361.

RMS % Error	Life Prediction Ratio Summary
29.20	0. .5 .8 1.25 2.

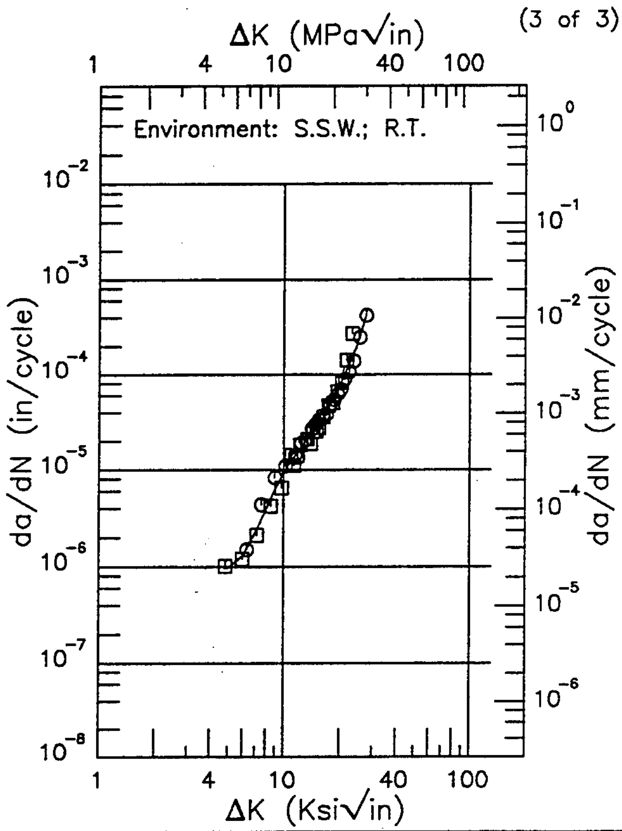
RMS % Error	Life Prediction Ratio Summary
12.53	0. .5 .8 1.25 2.

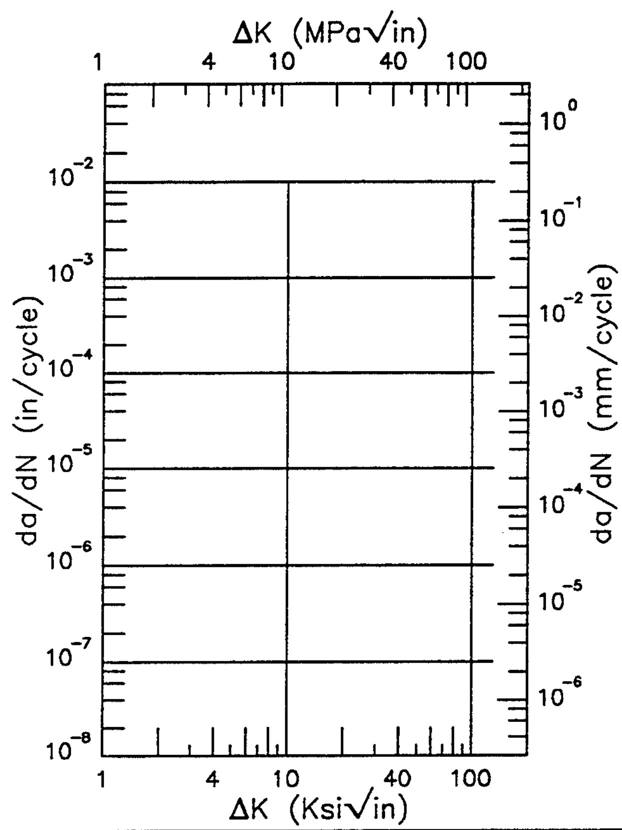
Figure 8.16.3.1.25

Condition/Ht: T73652
Form: 1.25 in. Forging
Specimen Type: WOL
Orientation: T–L
Stress Ratio: 0.02
Frequency: 1 – 20 Hz

Yield Strength: 59 – 63.5 ksi
Ult. Strength: 70 – 72.3 ksi
Specimen Thk: 1.25 in.
Specimen Width: 5 in.
Ref: MA005

(3 of 3)





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
4.82 (min)	0.974
5.	0.974
6.	1.31
7.	2.21
8.	3.86
9.	6.37
10.	9.61
13.	19.7
16.	33.0
20.	76.6
25.	226.
27.58 (max)	408.

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error	Life Prediction Ratio Summary
17.63	0. .5 .8 1.25 2.

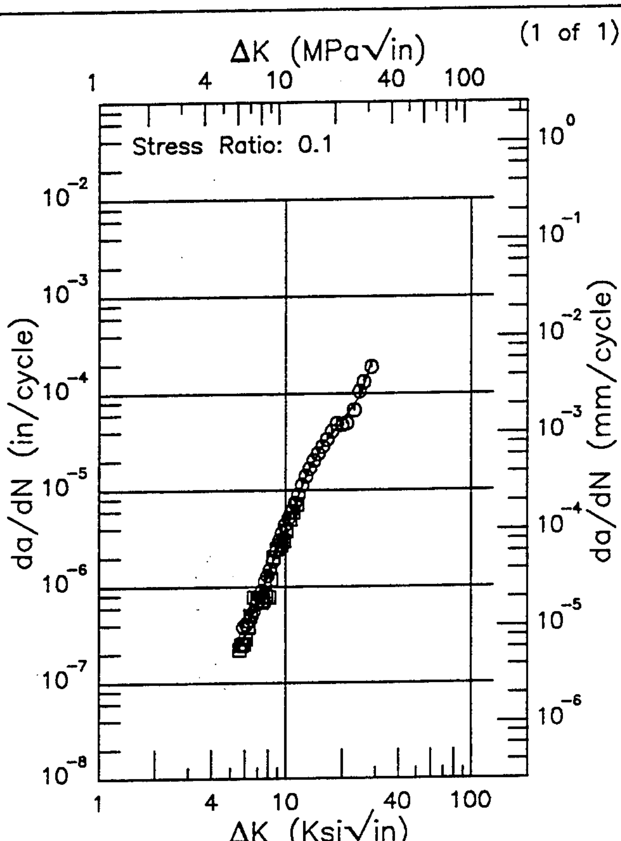
RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

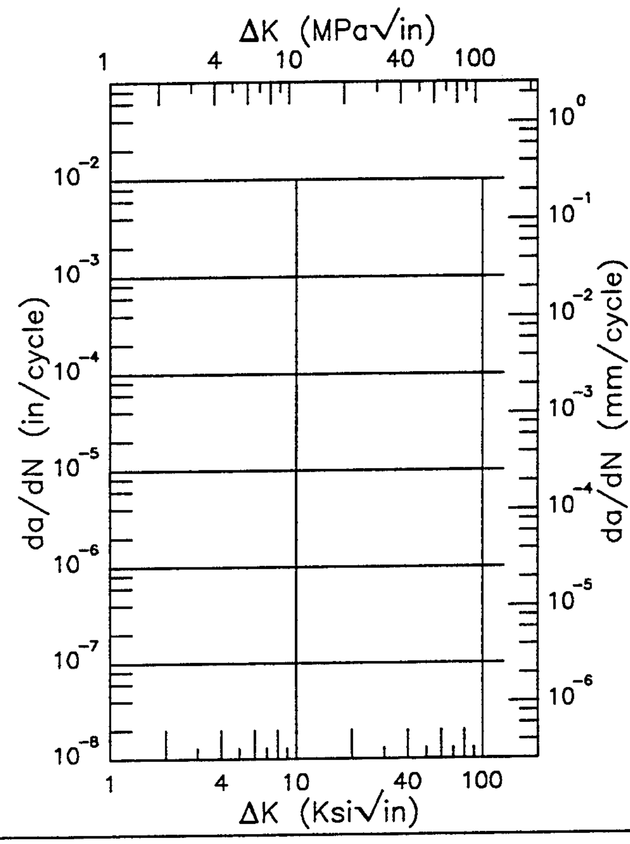
Figure 8.16.3.1.25 (Concluded)

R ⊣ 7175 ⊢

Condition/Ht: T74	Yield Strength:
Form:	Ult. Strength:
Specimen Type: CT	Specimen Thk: 0.25 – 0.252 in.
Orientation: L–T	Specimen Width: 2 in.
Frequency: 10 Hz	Ref: NC005
Environment: LAB AIR; RT	

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
5.62 (min)	0.248
6.	0.323
7.	0.651
8.	1.27
9.	2.35
10.	4.07
13.	14.3
16.	30.6
20.	50.5
25.	97.4
28.48 (max)	213.

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error	Life Prediction Ratio Summary
14.29	0. .5 .8 1.25 2.

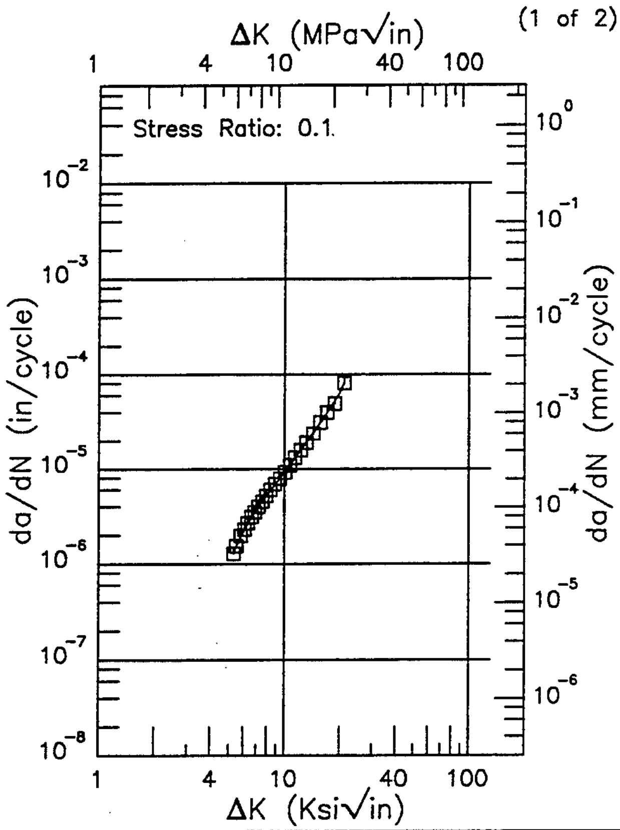
RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

Figure 8.16.3.1.26

Condition/Ht: T74
Form: Forging
Specimen Type: CT
Orientation: L-T
Frequency: 10 Hz
Environment: LAB AIR; RT

Yield Strength: 72.4 ksi
Ult. Strength:
Specimen Thk: 0.363 – 0.365 in.
Specimen Width: 1.498 – 1.499 in.
Ref: SW001

(1 of 2)



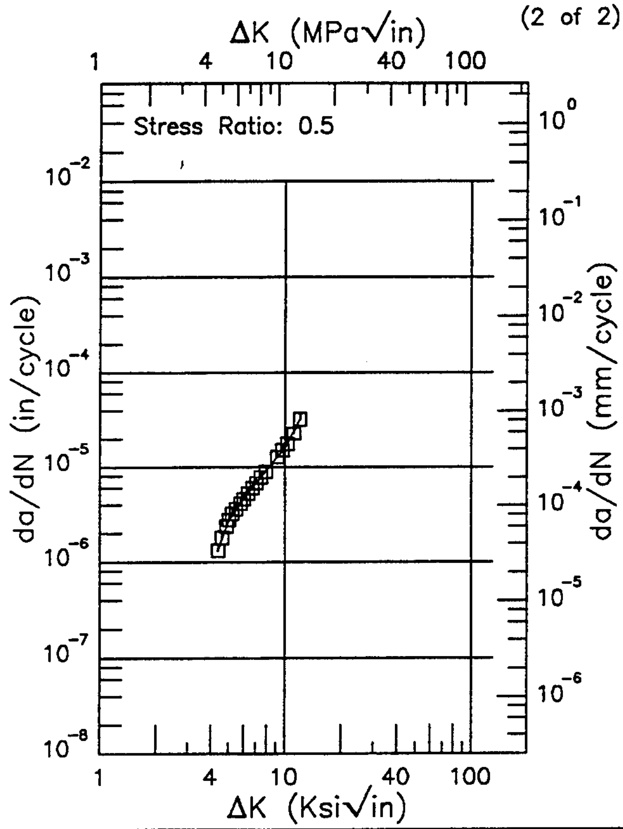
ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
5.29 (min)	1.30
6.	2.20
7.	3.66
8.	5.26
9.	7.07
10.	9.23
13.	18.7
16.	33.2
20.	64.0
20.89 (max)	79.6

RMS % Error 1.74

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

(2 of 2)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
4.36 (min)	1.30
5.	2.68
6.	4.60
7.	6.69
8.	9.33
9.	12.4
10.	16.2
11.98 (max)	31.6

RMS % Error 2.53

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

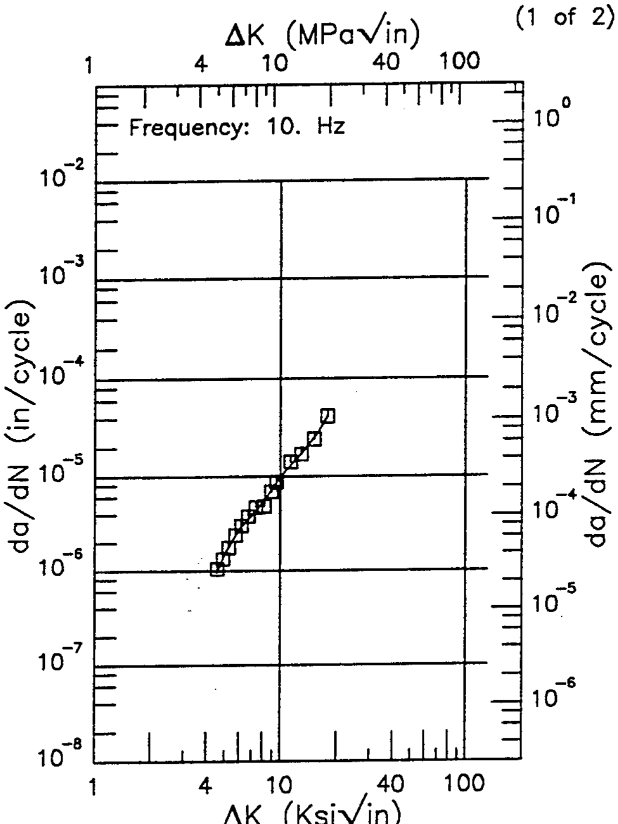
Figure 8.16.3.1.27

F 7175

Condition/Ht: T74
Form: Forging
Specimen Type: CT
Orientation: L-T
Stress Ratio: 0.1
Environment: LAB AIR; RT

Yield Strength: 72.4 ksi
Ult. Strength:
Specimen Thk: 0.171 in.
Specimen Width: 1.5 in.
Ref: SW001

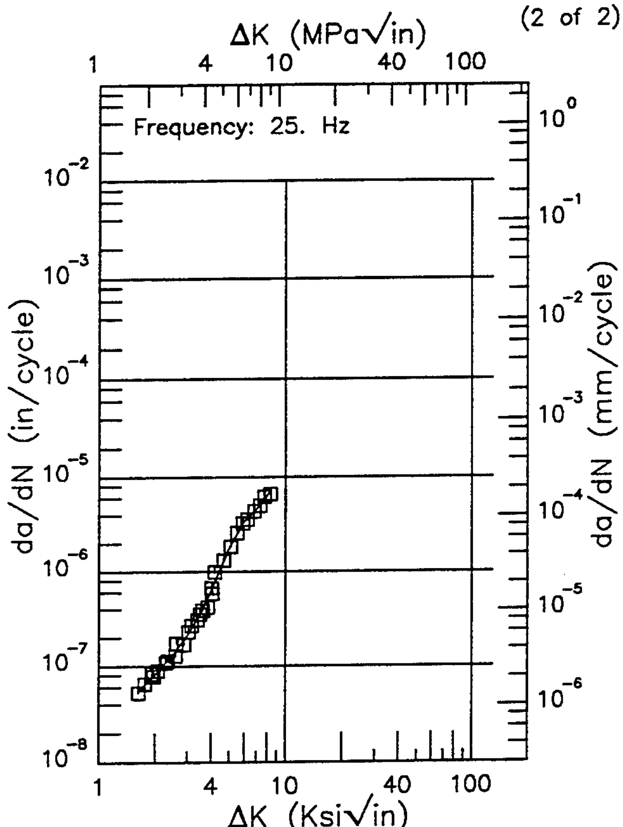
(1 of 2)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
4.57 (min)	0.951
5.	1.50
6.	2.74
7.	3.85
8.	5.22
9.	7.30
10.	9.96
13.	17.5
16.	29.1
17.79 (max)	41.0

RMS % Error	Life Prediction Ratio Summary
5.84	0. .5 .8 1.25 2.

(2 of 2)



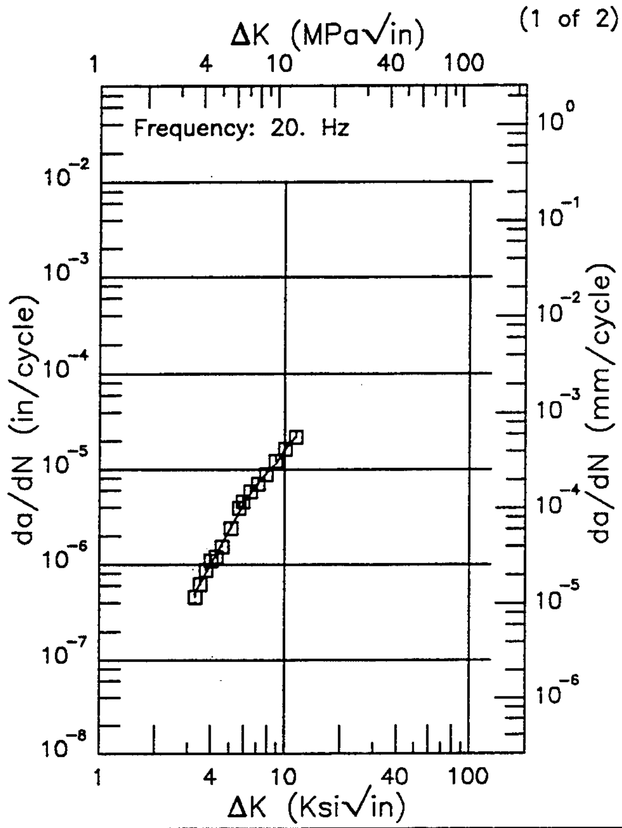
ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
1.62 (min)	0.0545
2.	0.0821
2.5	0.132
3.	0.213
3.5	0.357
4.	0.624
5.	1.77
6.	3.42
7.	4.59
8.	6.35
8.22 (max)	7.06

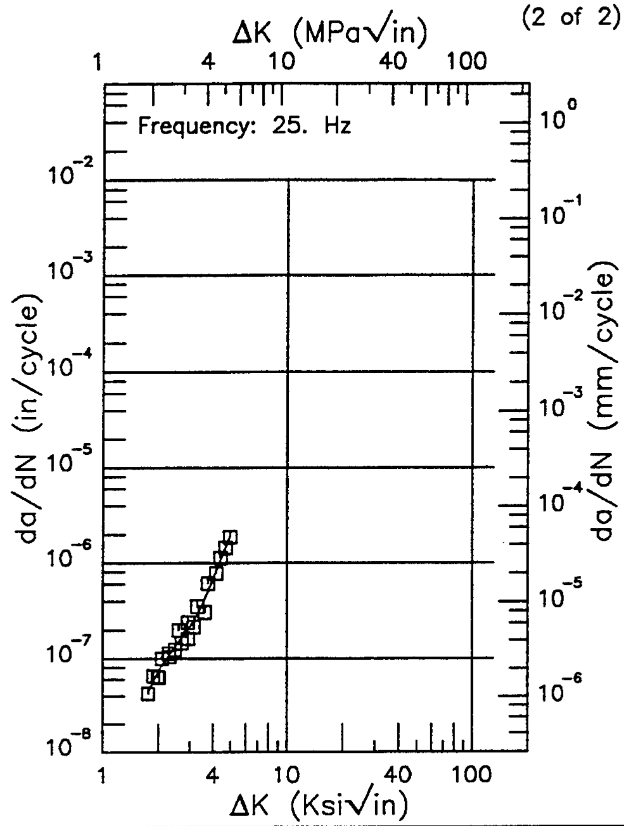
RMS % Error	Life Prediction Ratio Summary
8.77	0. .5 .8 1.25 2.

Figure 8.16.3.1.28

Condition/Ht: T74
Form: Forging
Specimen Type: CT
Orientation: L–T
Stress Ratio: 0.5
Environment: LAB AIR; RT

Yield Strength: 72.4 ksi
Ult. Strength:
Specimen Thk: 0.192 in.
Specimen Width: 1.502 in.
Ref: SW001





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
3.28 (min)	0.493
3.5	0.618
4.	1.00
5.	2.29
6.	4.38
7.	6.94
8.	9.20
9.	11.7
10.	16.2
11.42 (max)	21.8

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
1.75 (min)	0.0438
2.	0.0750
2.5	0.138
3.	0.215
3.5	0.367
4.	0.687
4.93 (max)	1.84

RMS % Error 6.19

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

RMS % Error 15.04

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

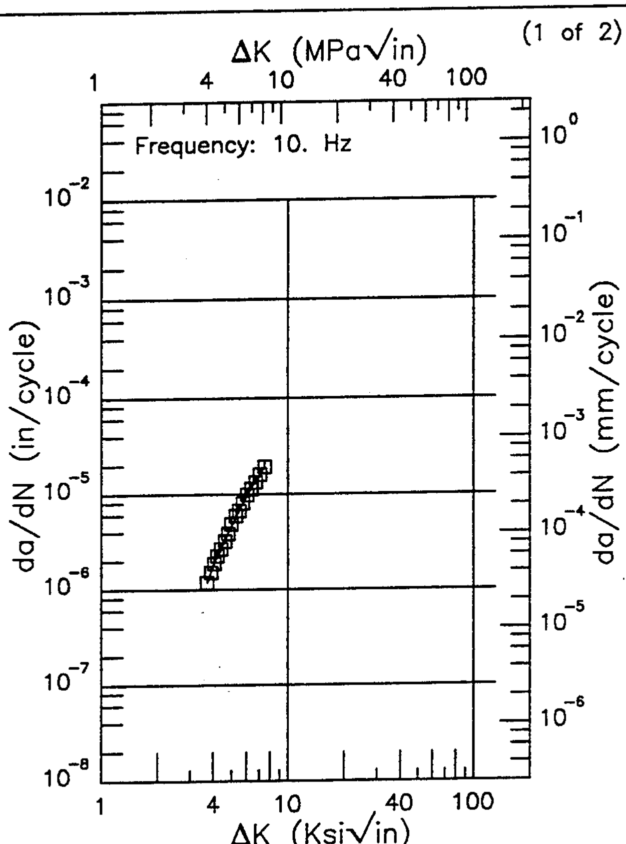
Figure 8.16.3.1.29

F 7175

Condition/Ht: T74
Form: Forging
Specimen Type: CT
Orientation: L-T
Stress Ratio: 0.8
Environment: LAB AIR; RT

Yield Strength: 72.4 ksi
Ult. Strength:
Specimen Thk: 0.187 – 0.19 in.
Specimen Width: 1.498 – 1.501 in.
Ref: SW001

(1 of 2)



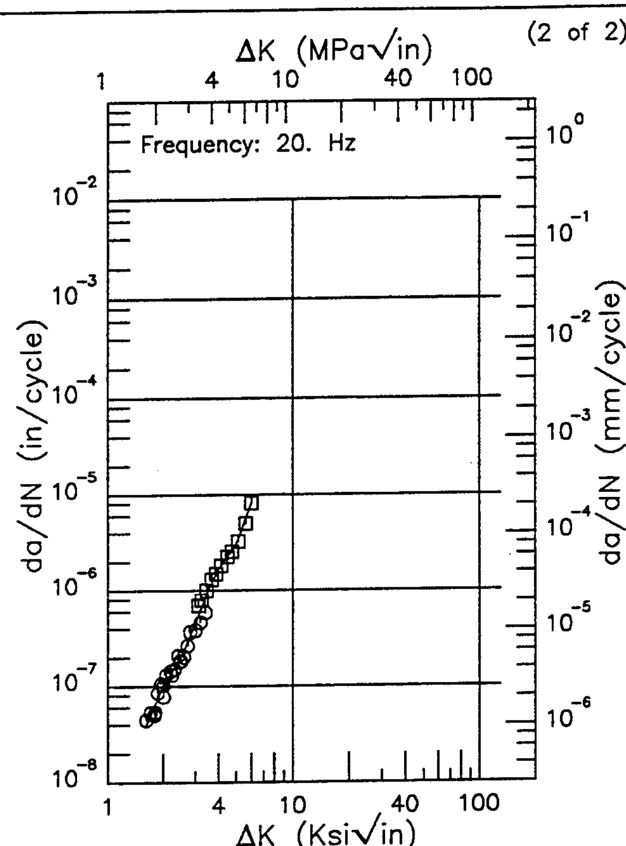
ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
3.70 (min)	1.18
4.	1.77
5.	4.66
6.	9.34
7.	15.3
7.48 (max)	19.1

RMS % Error 1.49

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

(2 of 2)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
1.61 (min)	0.0385
2.	0.0997
2.5	0.203
3.	0.454
3.5	0.993
4.	1.67
5.	3.05
5.98 (max)	8.07

RMS % Error 14.24

Life Prediction Ratio Summary

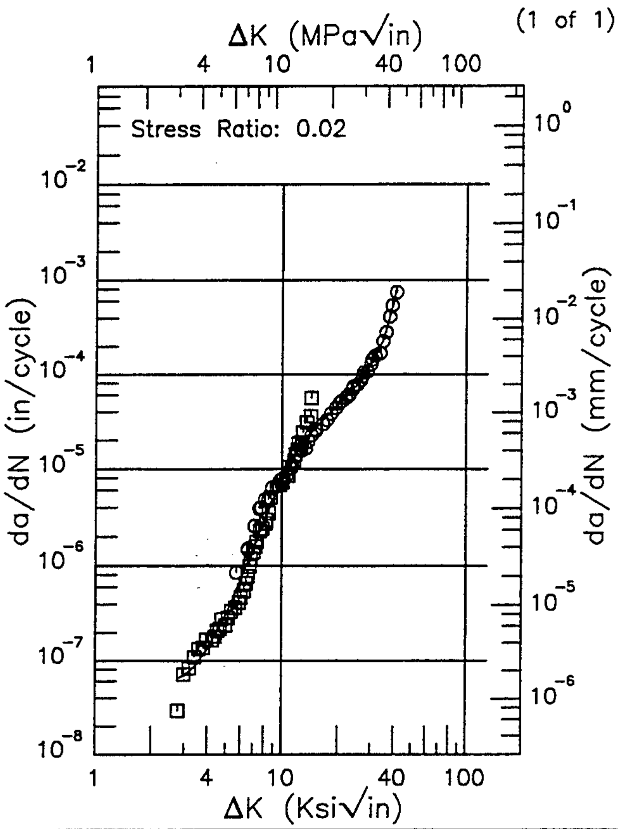
0. .5 .8 1.25 2.

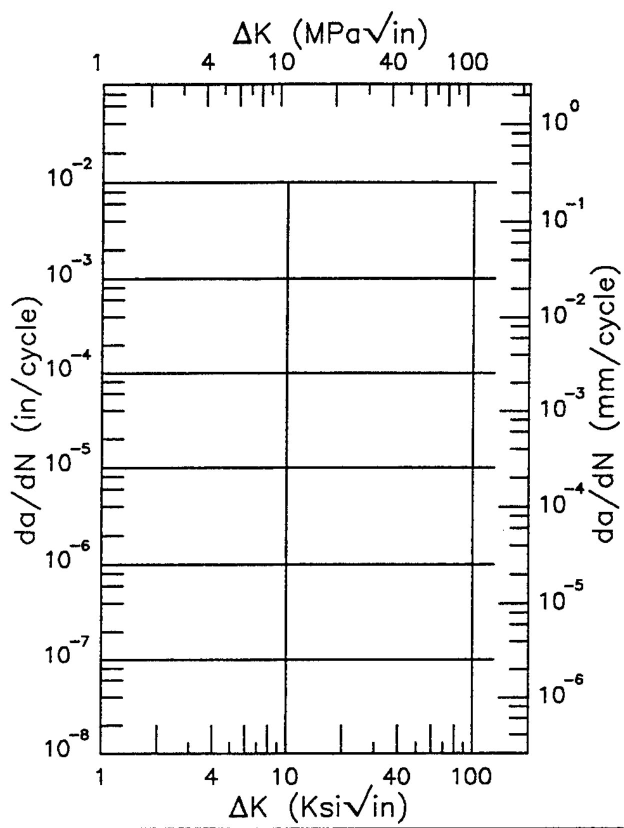
Figure 8.16.3.1.30

Condition/Ht: T74
Form: Forging
Specimen Type: CCP (max load specified)
Orientation: L–T
Frequency:
Environment: LAB AIR; RT

Yield Strength: 70 ksi
Ult. Strength: 79 ksi
Specimen Thk: 0.25 in.
Specimen Width: 3.95 in.
Ref: MD002

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
2.76 (min)	0.0651
3.	0.0694
3.5	0.0912
4.	0.133
5.	0.311
6.	0.711
7.	1.49
8.	2.82
9.	4.86
10.	7.65
16.	30.9
20.	46.9
30.	129.
40.	626.
41.10 (max)	829.

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error	Life Prediction Ratio Summary
27.15	0. .5 .8 1.25 2.

RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

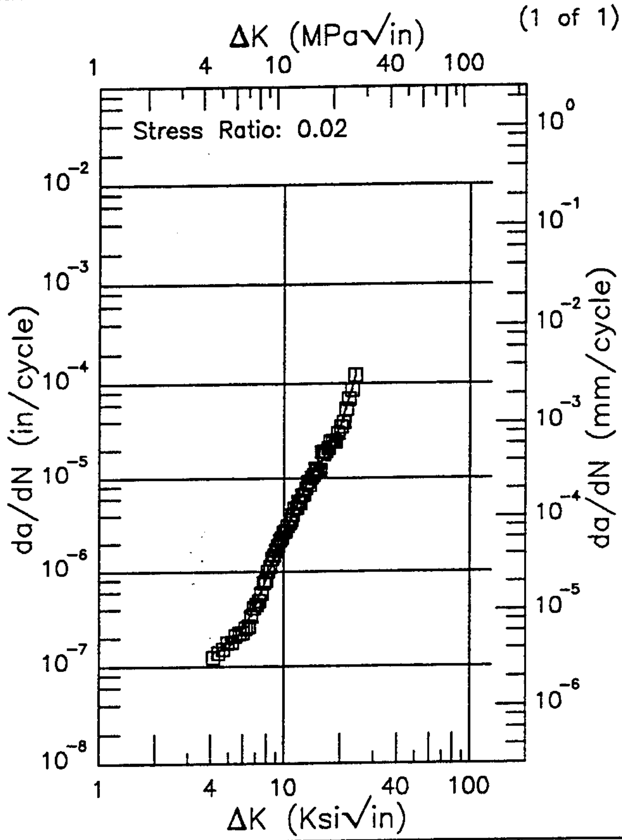
Figure 8.16.3.1.31

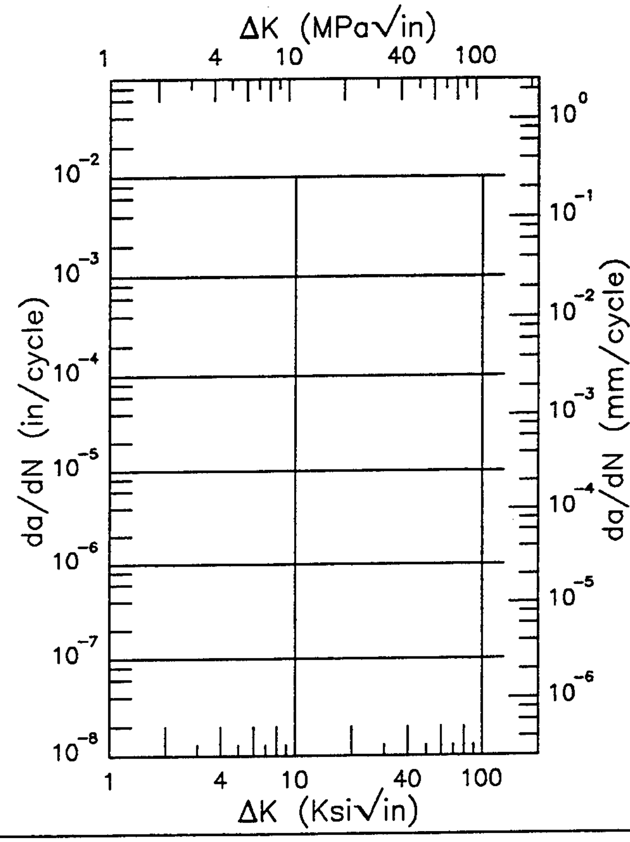
R 7175

Condition/Ht: T74
Form: Forging
Specimen Type: CCP (max load specified)
Orientation: L–T
Frequency:
Environment: LAB AIR; RT

Yield Strength: 70 ksi
Ult. Strength: 79 ksi
Specimen Thk: 0.109 in.
Specimen Width: 3.95 in.
Ref: MD002

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
4.13 (min)	0.140
5.	0.155
6.	0.247
7.	0.447
8.	0.819
9.	1.45
10.	2.43
13.	7.87
16.	15.6
20.	35.2
24.00 (max)	121.

ΔK (Ksi√in) da/dN (10^{-6}in/cycle)

RMS % Error 8.62

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

RMS % Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

Figure 8.16.3.1.32

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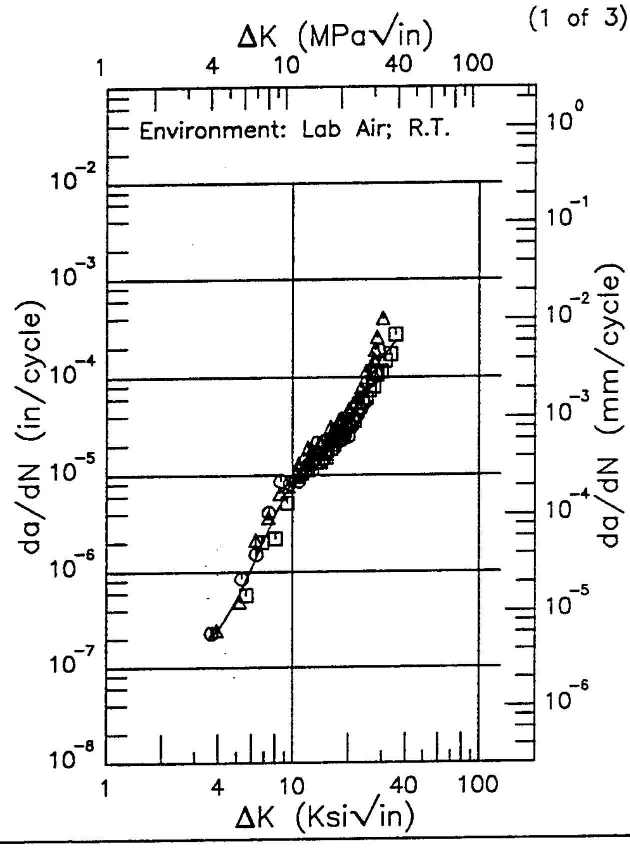
7175

E

Condition/Ht: T74
Form: Forging
Specimen Type: WOL
Orientation: L–T
Stress Ratio: 0.02
Frequency: 0.1 – 20 Hz

Yield Strength: 66 – 70 ksi
Ult. Strength: 77 – 79 ksi
Specimen Thk: 1.25 in.
Specimen Width: 5 in.
Ref: MD002

(1 of 3)



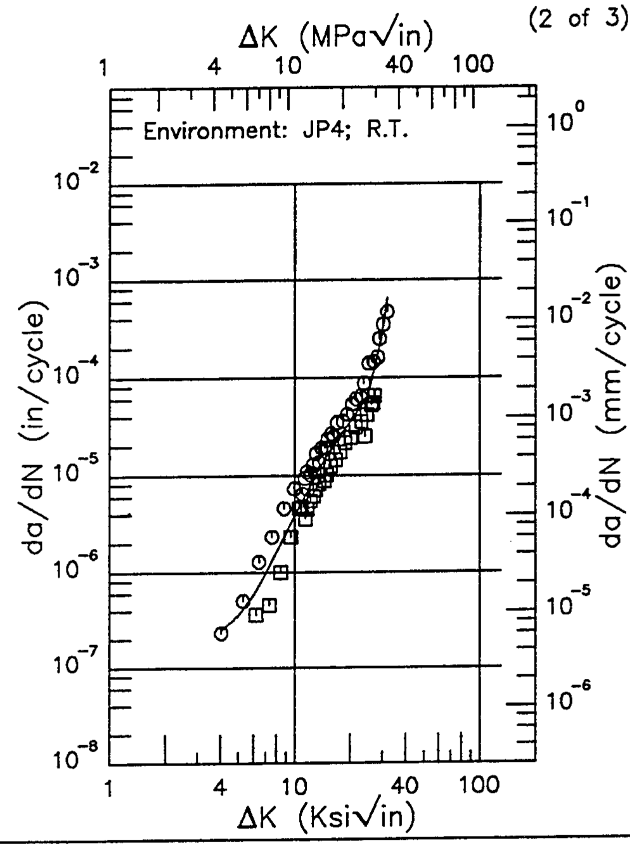
ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
3.67 (min)	0.208
4.	0.249
5.	0.507
6.	1.08
7.	2.13
8.	3.81
9.	6.09
10.	8.78
13.	15.7
16.	20.2
20.	33.7
25.	85.1
30.	159.
35.	224.
35.40 (max)	229.

RMS % Error
28.85

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

(2 of 3)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
4.02 (min)	0.252
5.	0.355
6.	0.580
7.	0.973
8.	1.60
9.	2.53
10.	3.83
13.	10.2
16.	19.5
20.	35.4
25.	64.4
30.	275.
31.70 (max)	655.

RMS % Error
44.14

Life Prediction Ratio Summary

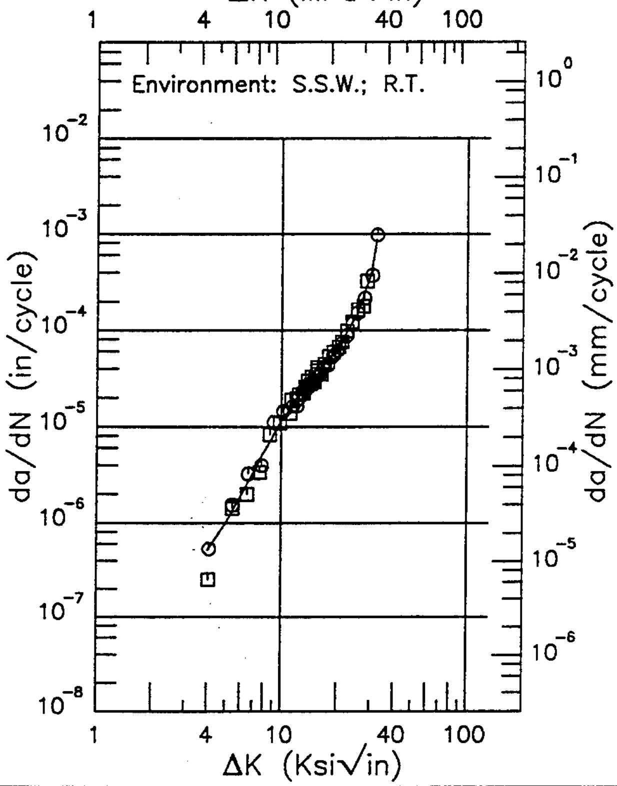
0. .5 .8 1.25 2.

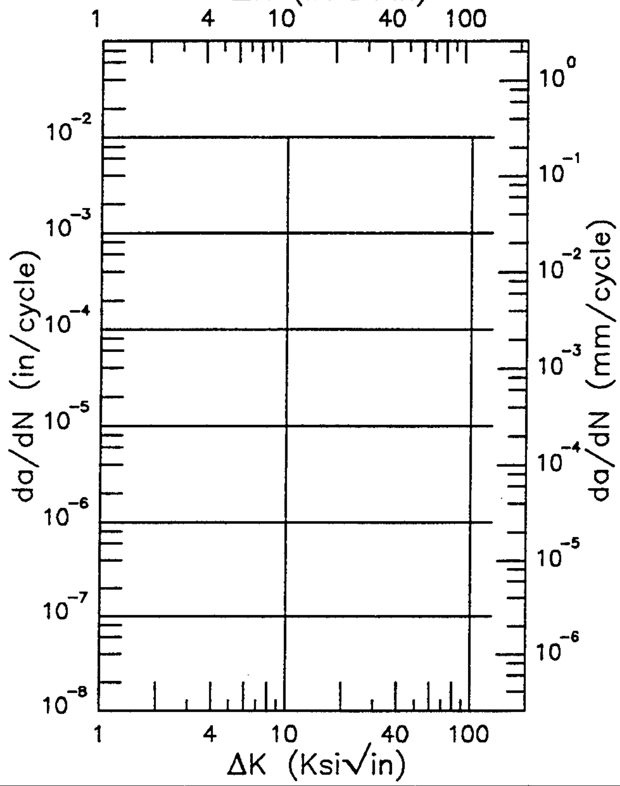
Figure 8.16.3.1.33

Condition/Ht: T74
Form: Forging
Specimen Type: WOL
Orientation: L–T
Stress Ratio: 0.02
Frequency: 0.1 – 20 Hz

Yield Strength: 66 – 70 ksi
Ult. Strength: 77 – 79 ksi
Specimen Thk: 1.25 in.
Specimen Width: 5 in.
Ref: MD002

(3 of 3)





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
4.03 (min)	0.525
5.	0.997
6.	1.89
7.	3.33
8.	5.42
9.	8.19
10.	11.5
13.	23.0
16.	36.6
20.	66.1
25.	141.
30.	388.
32.20 (max)	886.

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error	Life Prediction Ratio Summary
13.14	0. .5 .8 1.25 2.

RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

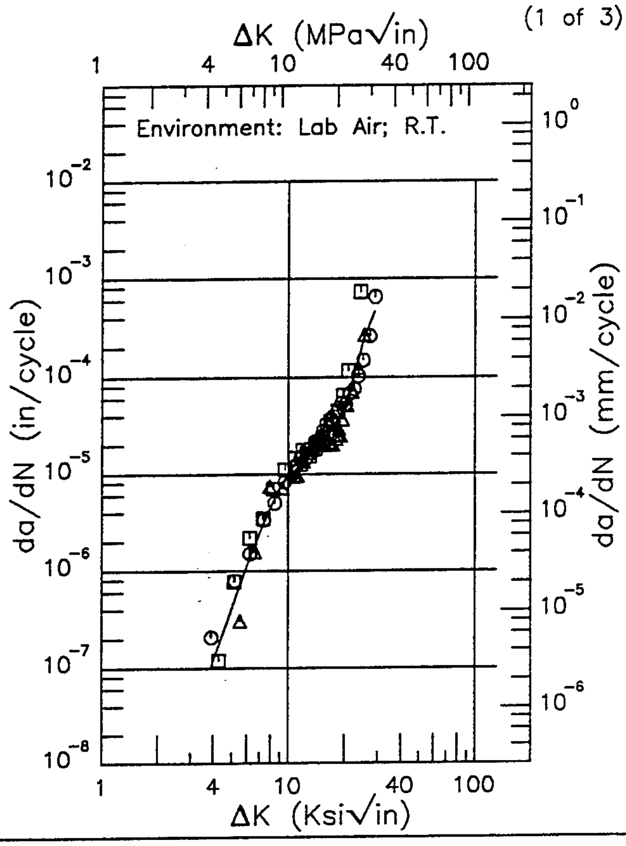
Figure 8.16.3.1.33 (Concluded)

7175

E

Condition/Ht: T74	Yield Strength: 59 – 64 ksi
Form: Forging	Ult. Strength: 70 – 72 ksi
Specimen Type: WOL	Specimen Thk: 1.25 in.
Orientation: T–L	Specimen Width: 5 in.
Stress Ratio: 0.02	Ref: MD002
Frequency: 0.1 – 20 Hz	

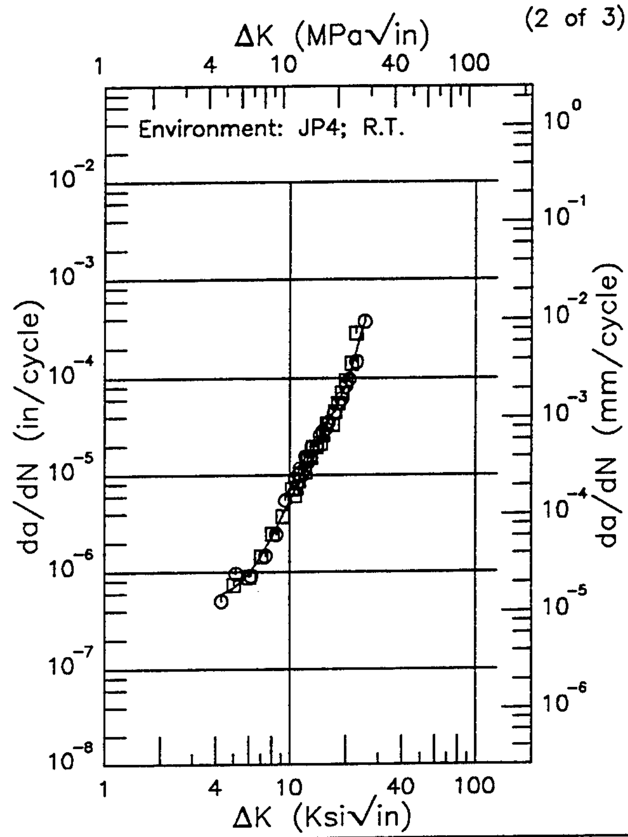
(1 of 3)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
3.88 (min)	0.102
4.	0.120
5.	0.414
6.	1.11
7.	2.43
8.	4.48
9.	7.18
10.	10.3
13.	18.0
16.	23.4
20.	48.9
25.	231.
28.90 (max)	468.

RMS % Error	Life Prediction Ratio Summary
44.39	0. .5 .8 1.25 2.

(2 of 3)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
4.29 (min)	0.590
5.	0.681
6.	0.958
7.	1.45
8.	2.26
9.	3.53
10.	5.46
13.	16.6
16.	33.1
20.	79.1
25.	344.
25.30 (max)	364.

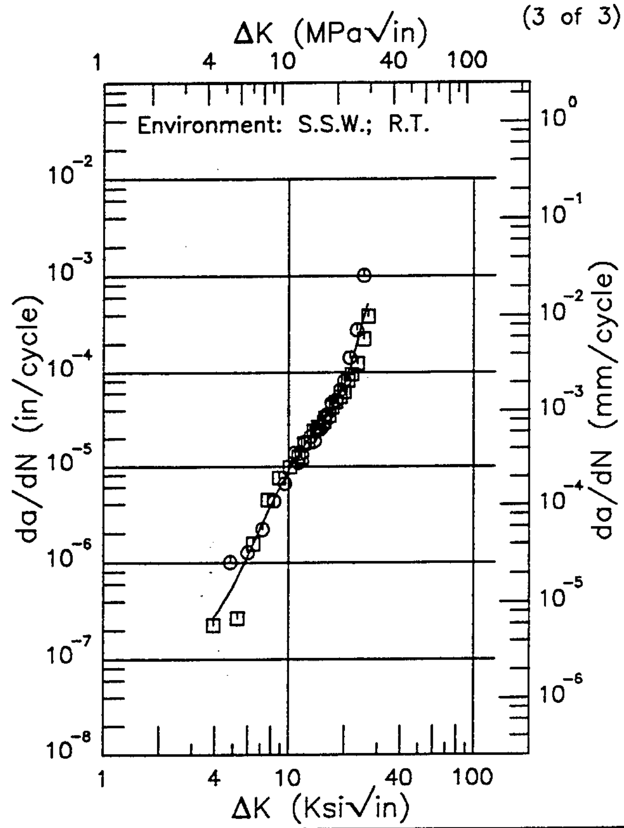
RMS % Error	Life Prediction Ratio Summary
14.66	0. .5 .8 1.25 2.

Figure 8.16.3.1.34

Condition/Ht: T74
Form: Forging
Specimen Type: WOL
Orientation: T–L
Stress Ratio: 0.02
Frequency: 0.1 – 20 Hz

Yield Strength: 59 – 64 ksi
Ult. Strength: 70 – 72 ksi
Specimen Thk: 1.25 in.
Specimen Width: 5 in.
Ref: MD002

(3 of 3)

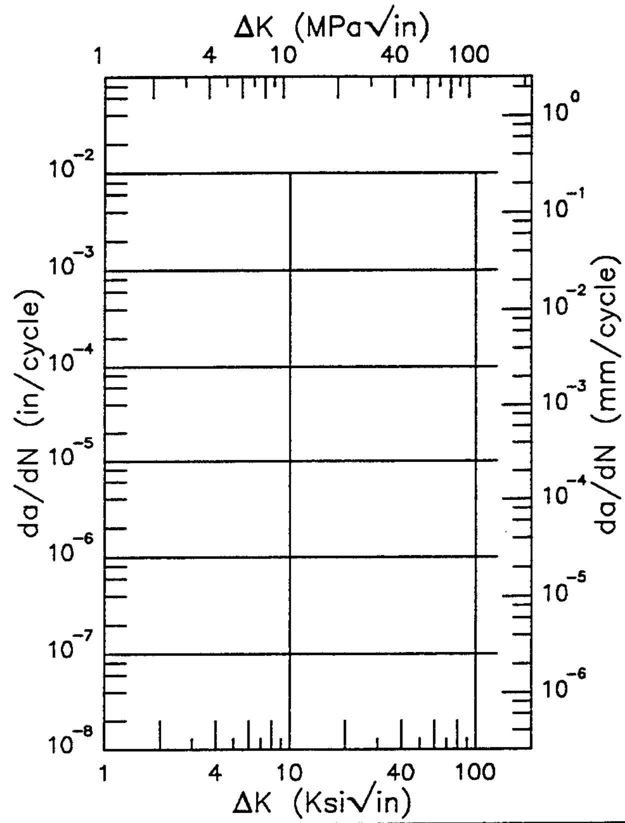


ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
3.89 (min)	0.263
4.	0.282
5.	0.571
6.	1.17
7.	2.24
8.	3.92
9.	6.26
10.	9.17
13.	20.2
16.	33.7
20.	72.1
25.	351.
26.80 (max)	517.

RMS % Error
34.34

Life Prediction Ratio Summary

0. .5 .8 1.25 2.



ΔK (Ksi√in) da/dN (10^{-6}in/cycle)

RMS % Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

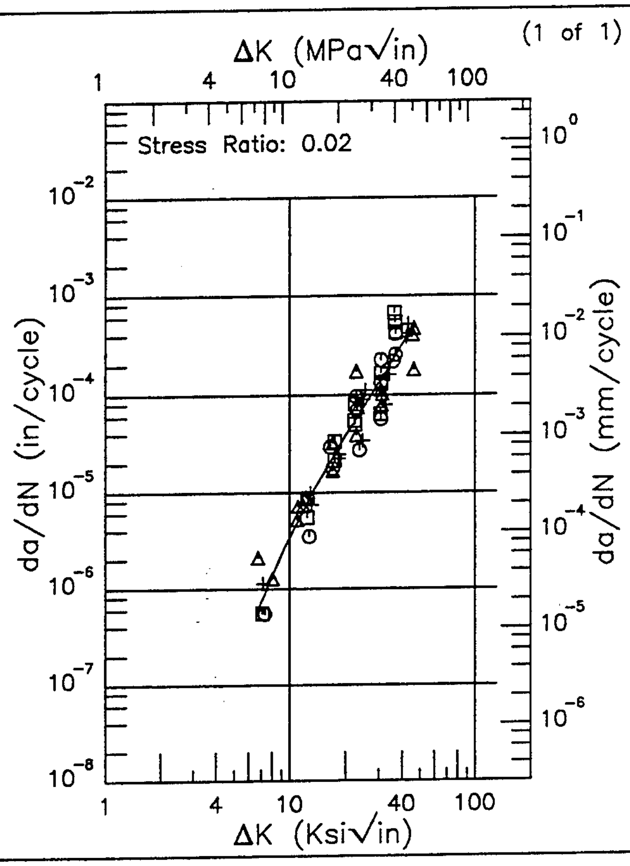
Figure 8.16.3.1.34 (Concluded)

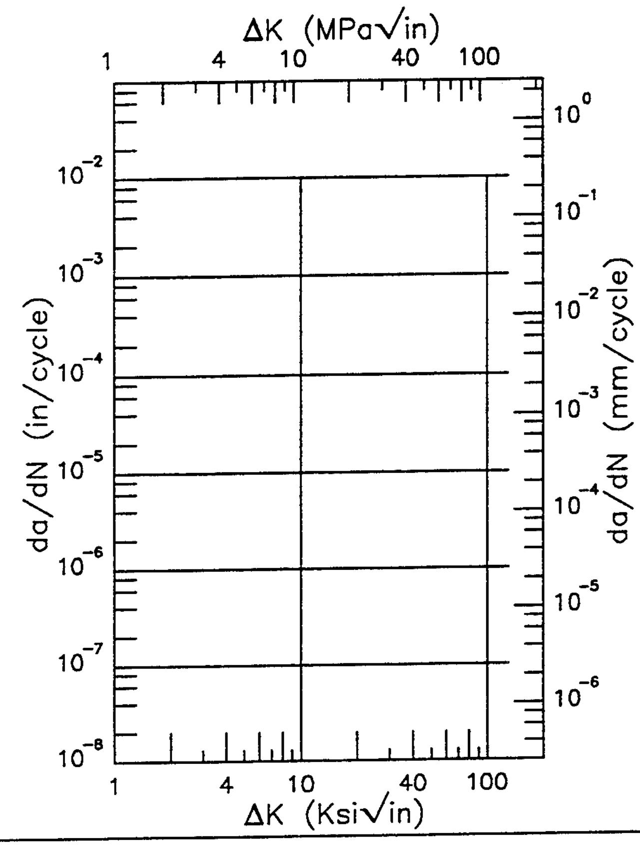
R 7175

Condition/Ht: T74
Form: 2.4 in. Forging
Specimen Type: TDCB
Orientation: L-T
Frequency: 0.1 – 10 Hz
Environment: LAB AIR; RT

Yield Strength: 69 – 71 ksi
Ult. Strength: 78 – 79 ksi
Specimen Thk: 1.25 in.
Specimen Width: 5.5 in.
Ref: MD002

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
6.72 (min)	0.595
7.	0.725
8.	1.34
9.	2.24
10.	3.44
13.	9.22
16.	18.8
20.	38.3
25.	75.9
30.	132.
35.	211.
40.	319.
46.40 (max)	514.

ΔK (Ksi√in) da/dN (10^{-6}in/cycle)

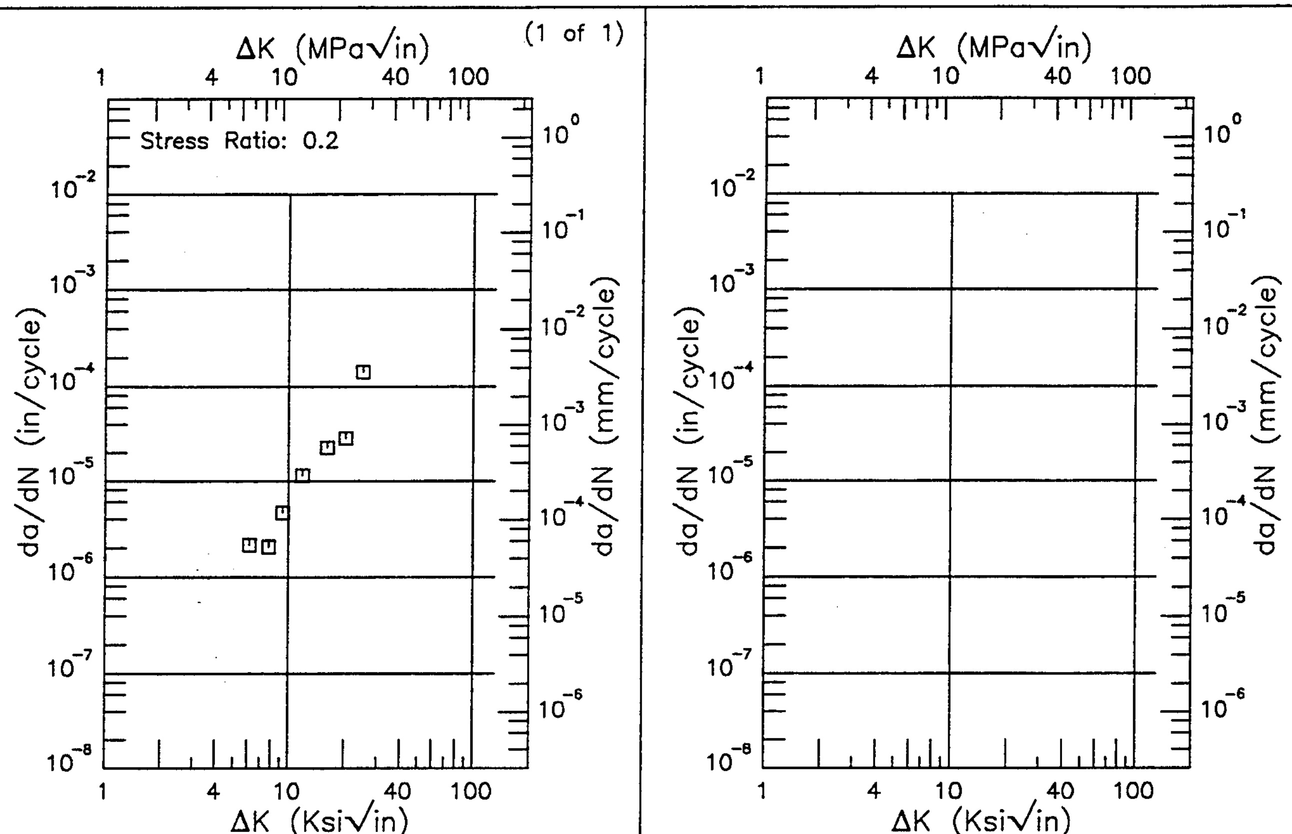
RMS % Error	Life Prediction Ratio Summary
61.11	0. .5 .8 1.25 2.

RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

Figure 8.16.3.1.35

Condition/Ht: T74
Form: 2.4 in. Forging
Specimen Type: TDCB
Orientation: L–T
Frequency: 0.1 – 10 Hz
Environment: L.H.A.; RT

Yield Strength: 69 ksi
Ult. Strength: 78 ksi
Specimen Thk: 1.25 in.
Specimen Width: 5.5 in.
Ref: MD002



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)	ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error	Life Prediction Ratio Summary	RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.		0. .5 .8 1.25 2.

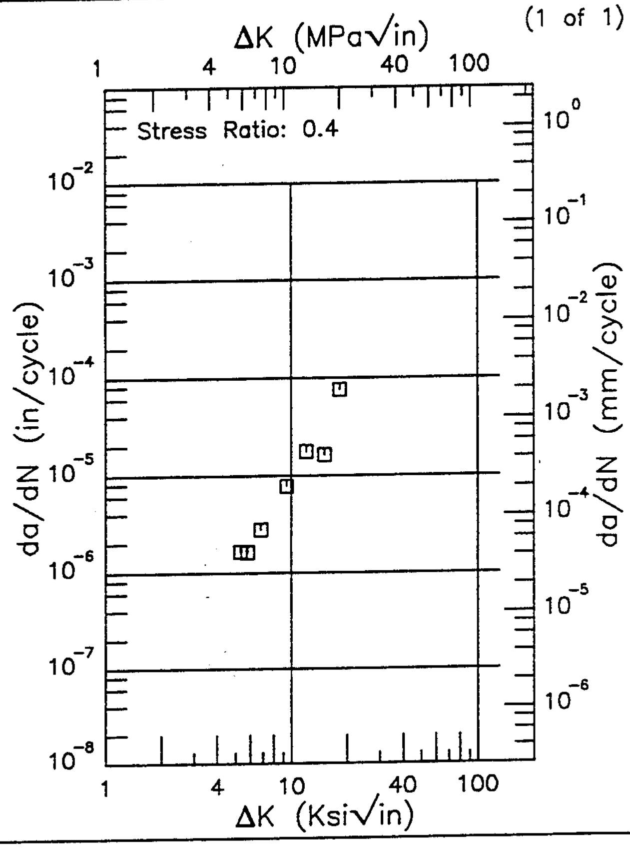
Figure 8.16.3.1.36

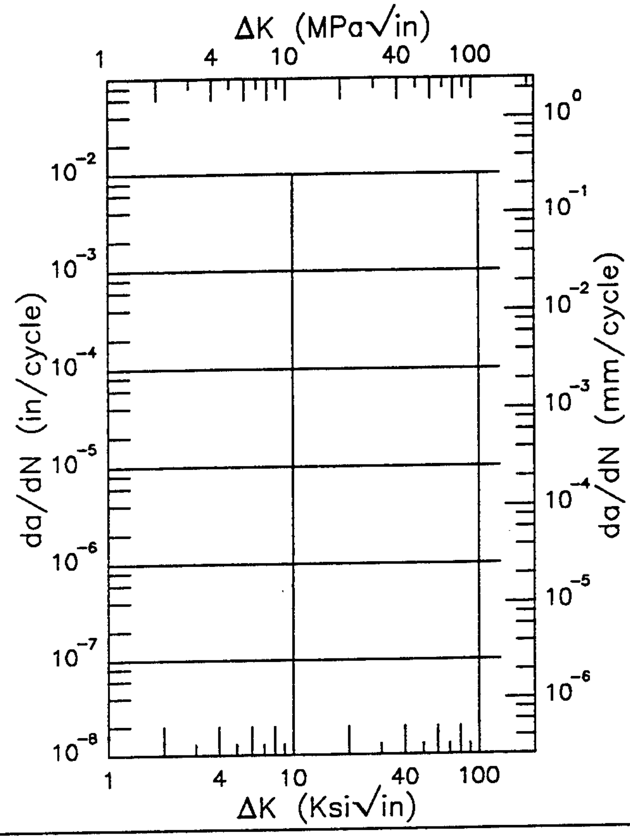
R 7175

Condition/Ht: T74
Form: 3.1 in. Forging
Specimen Type: TDCB
Orientation: L–T
Frequency: 0.1 – 10 Hz
Environment: DRY AIR; RT

Yield Strength: 66 ksi
Ult. Strength: 75 ksi
Specimen Thk: 1.25 in.
Specimen Width: 5.5 in.
Ref: MD002

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)	ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

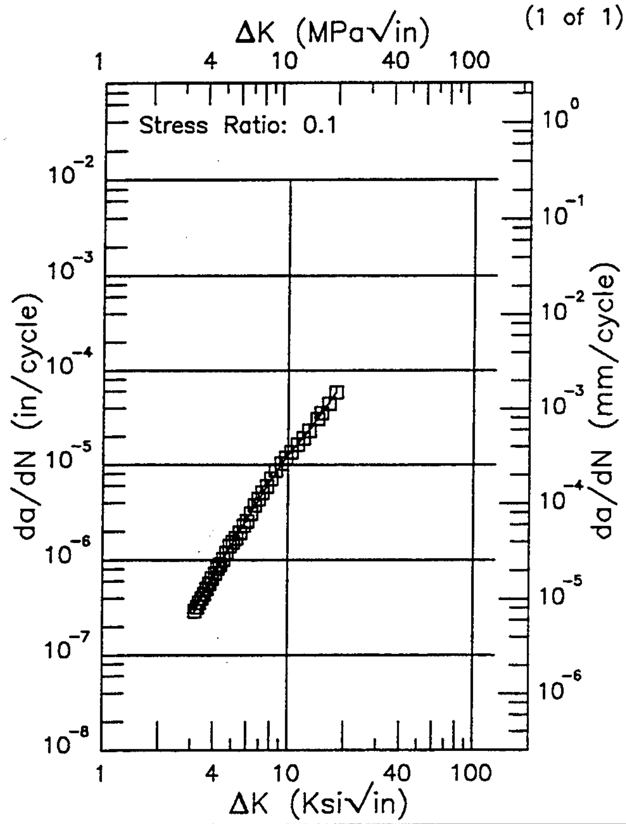
RMS % Error	Life Prediction Ratio Summary	RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.		0. .5 .8 1.25 2.

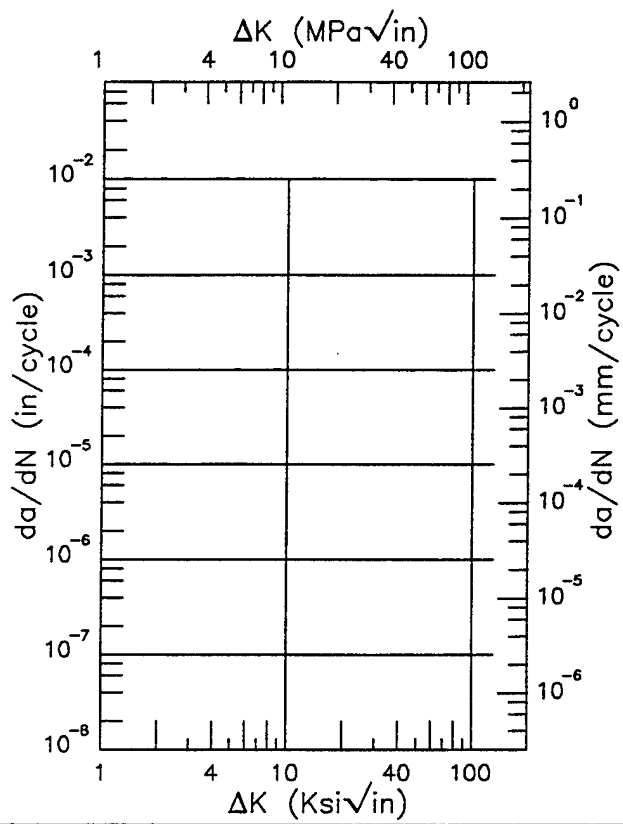
Figure 8.16.3.1.37

Condition/Ht: T76511
Form: Extrusion
Specimen Type: CT
Orientation: L-T
Frequency: 20 Hz
Environment: DRY AIR; RT

Yield Strength: 64.2 ksi
Ult. Strength:
Specimen Thk: 0.494 in.
Specimen Width: 2 in.
Ref: RI008

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
3.16 (min)	0.289
3.5	0.418
4.	0.672
5.	1.45
6.	2.65
7.	4.38
8.	6.70
9.	9.54
10.	12.7
13.	23.2
16.	42.0
17.88 (max)	57.2

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error	Life Prediction Ratio Summary
2.13	0. .5 .8 1.25 2.

RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

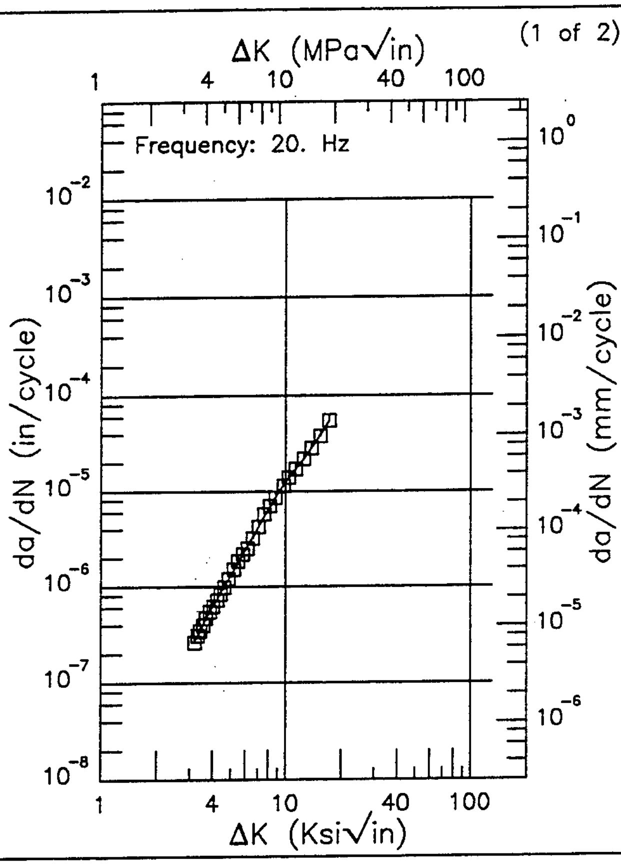
Figure 8.16.3.1.38

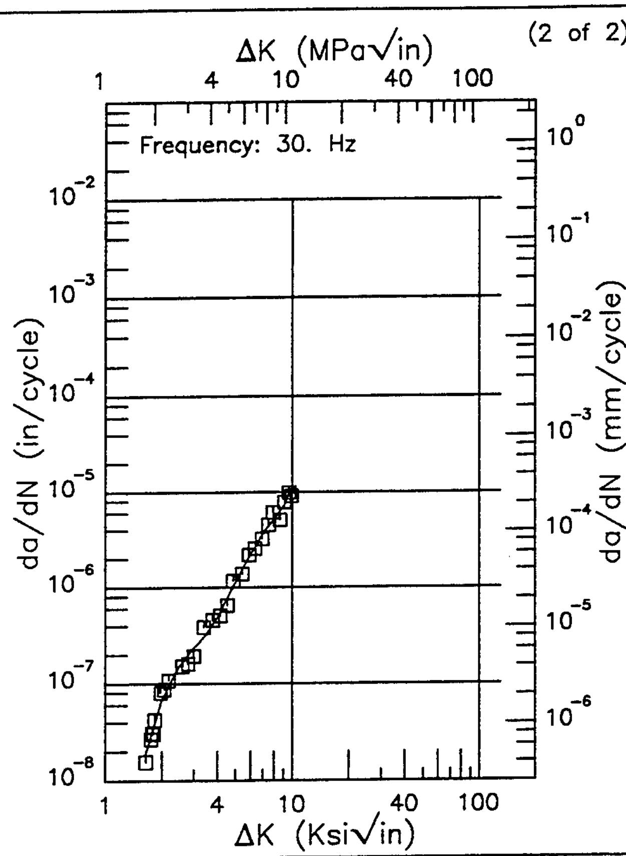
F

7175

Condition/Ht: T76511
Form: Extrusion
Specimen Type: CT
Orientation: L–T
Stress Ratio: 0.1
Environment: DRY AIR; RT

Yield Strength: 64.2 ksi
Ult. Strength:
Specimen Thk: 0.245 in.
Specimen Width: 2.004 in.
Ref: RI008





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
3.17 (min)	0.266
3.5	0.380
4.	0.607
5.	1.30
6.	2.39
7.	4.05
8.	6.38
9.	9.32
10.	12.6
13.	23.9
16.	44.2
17.12 (max)	54.7

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
1.64 (min)	0.0182
2.	0.0675
2.5	0.154
3.	0.234
3.5	0.330
4.	0.486
5.	1.11
6.	2.21
7.	3.64
8.	5.14
9.	7.00
9.88 (max)	10.6

RMS % Error: 2.43

Life Prediction Ratio Summary: 0. .5 .8 1.25 2.

RMS % Error: 14.37

Life Prediction Ratio Summary: 0. .5 .8 1.25 2.

Figure 8.16.3.1.39

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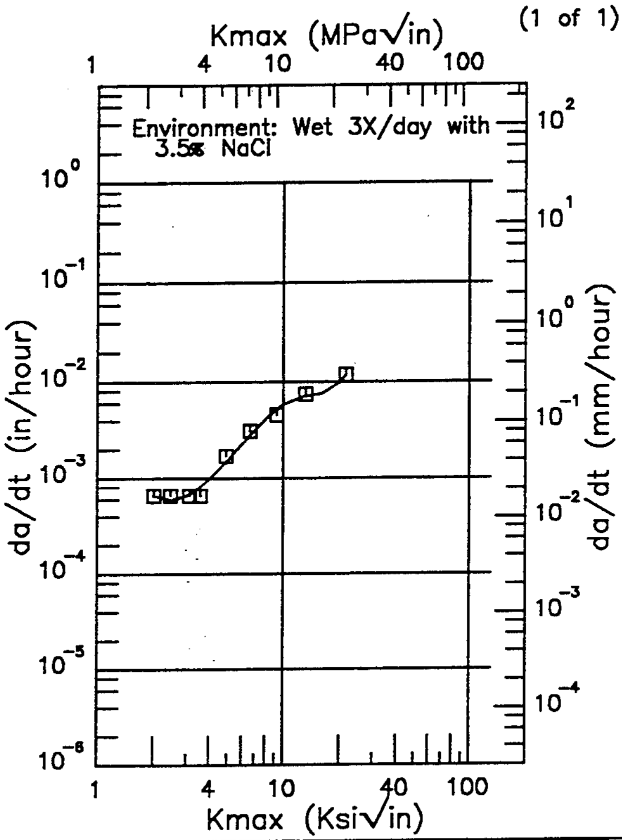
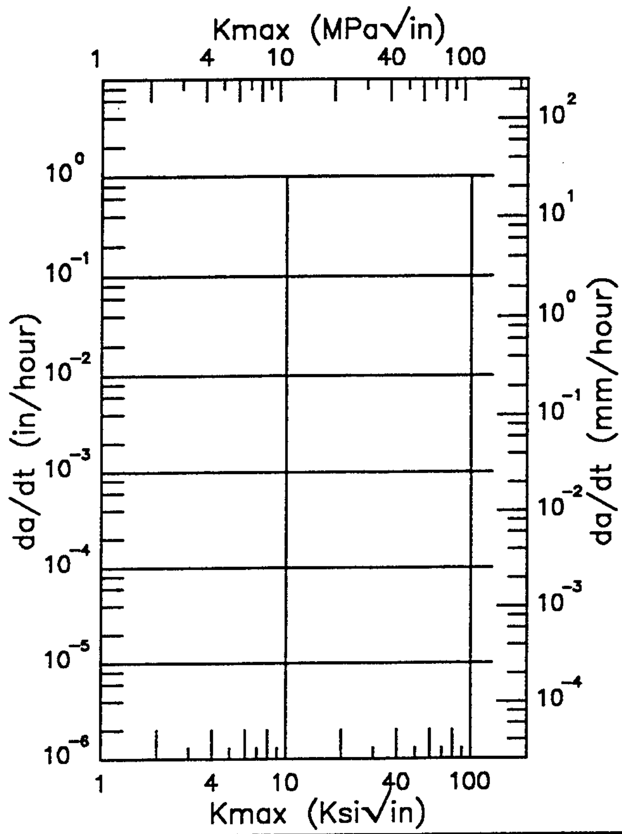
7175

Condition/Ht: T66
Form: Forging
Specimen Type: DCB
Orientation: S-L
Yield Strength:
Ult. Strength:

Specimen Thk: 1 in.
Specimen Width: 5 in.
A_O:
K_{Iscc}:
Ref: 78313

(1 of 1)





Kmax (Ksi√in)	da/dt (10^{-3}in/hour)
2.00 (min)	0.658
3.	0.593
3.	0.657
4.	0.793
4.	0.988
5.	1.54
6.	2.29
7.	3.18
8.	4.13
9.	5.05
10.	5.85
13.	7.10
16.	7.59
20.	9.89
21.50 (max)	11.8

Kmax (Ksi√in)	da/dt (10^{-3}in/hour)

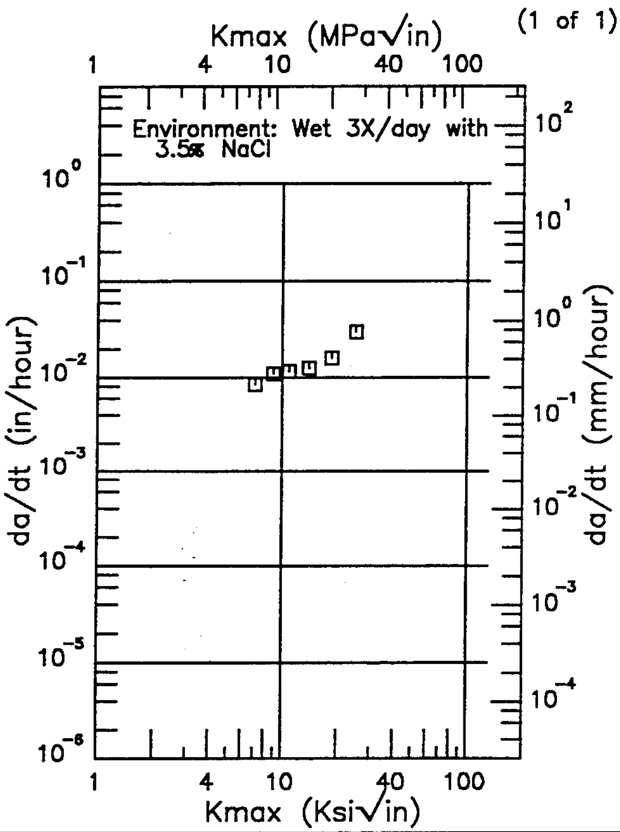
RMS % Error
10.66

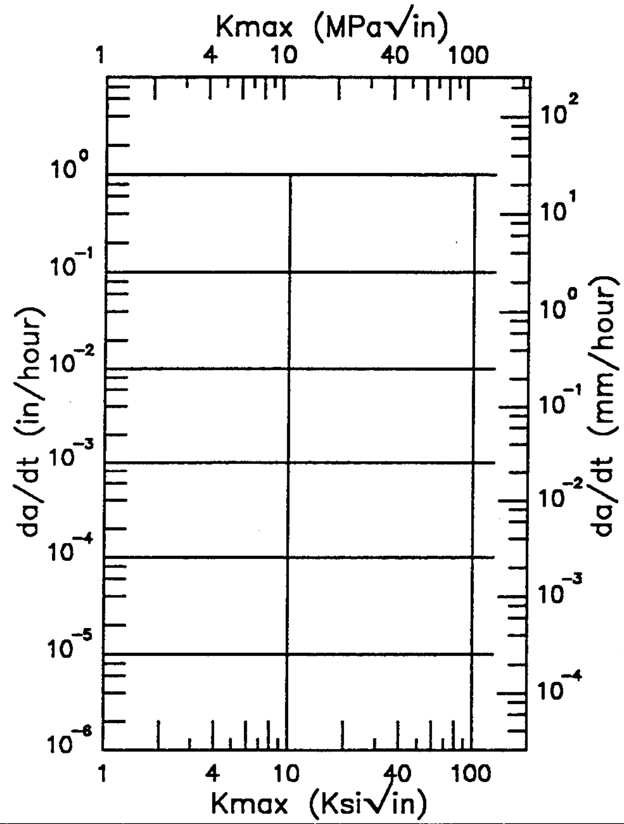
RMS % Error

Figure 8.16.3.2.1

Condition/Ht: T66
Form: Forging
Specimen Type: DCB
Orientation: S–L
Yield Strength:
Ult. Strength:

Specimen Thk: 1 in.
Specimen Width: 5 in.
A_0:
K_{Iscc}:
Ref: 78313





Kmax (Ksi√in)	da/dt (10^{-3}in/hour)	Kmax (Ksi√in)	da/dt (10^{-3}in/hour)

RMS % Error		RMS % Error	

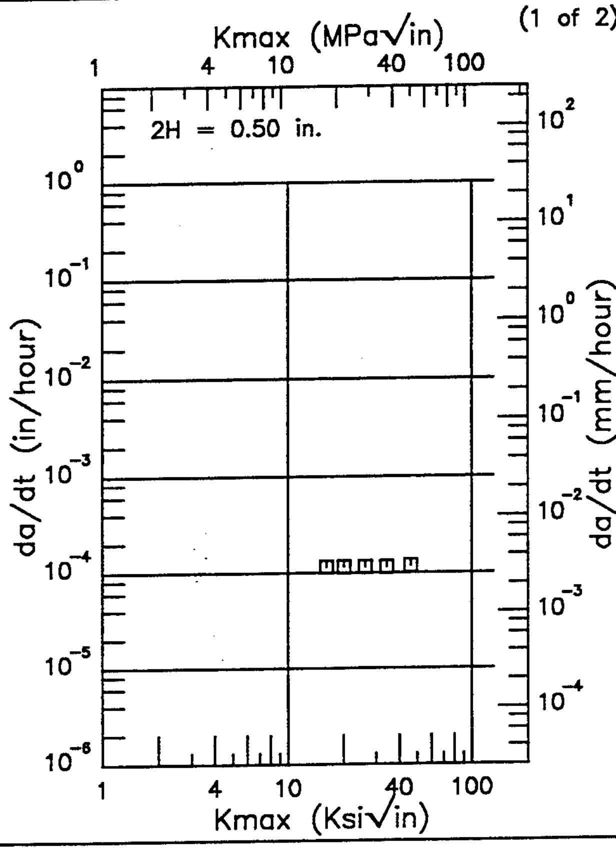
Figure 8.16.3.2.2

7175

Condition/Ht: T736
Form: Forging
Specimen Type: DCB
Orientation:
Yield Strength:
Ult. Strength:

Specimen Thk:
Specimen Width:
Ao:
KIscc:
Ref: 84284

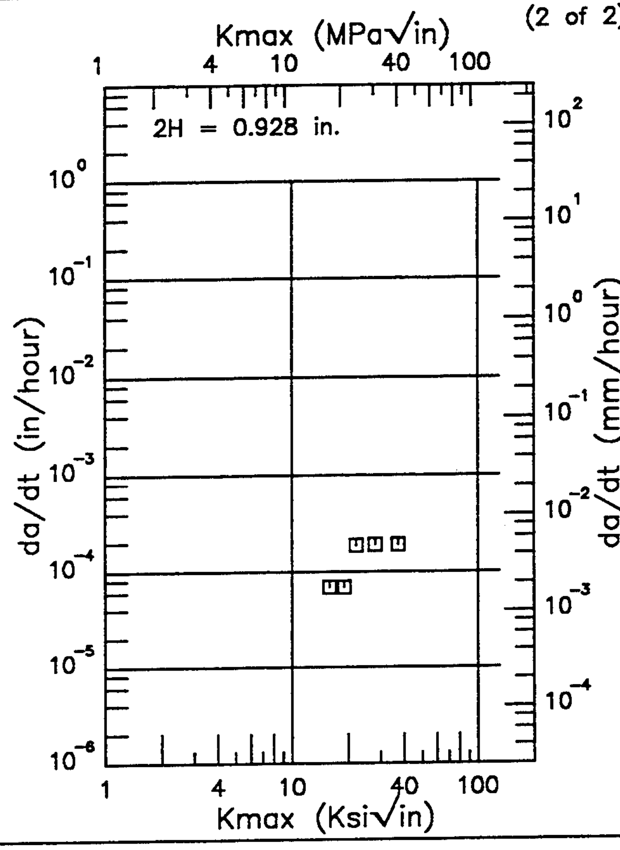
(1 of 2)



Kmax (Ksi√in)	da/dt (10^{-3}in/hour)

RMS % Error	

(2 of 2)



Kmax (Ksi√in)	da/dt (10^{-3}in/hour)

RMS % Error	

Figure 8.16.3.2.3

TABLE 8.16.3.3

K_{Iscc} SUMMARY FOR ALUMINUM ALLOY 7175

Condition/ Heat Treat	Prod Form	Test Temp (°F)	Spec Or.	Yield Str (Ksi)	Envir.	Specimen Design	Specimen Width (in)	Specimen Thick (in)	Prod Thk (in)	Crack (in)	K_Q (Ksi√in)	K_{Iscc} (Ksi√in)	Test Time (min)	Test Date	Refer
T66	F	R.T.	S-L	76	3.5% NaCl	DCB	5	1	---	0.7	29	<5	---	1969	78313
						DCB	5	1	---	0.7	29	<7	---	1969	78313
						DCB	5	1	---	0.7	29	<6	---	1969	78313
T73511	E	R.T.	S-L	---	3.5% NaCl	DCB	4.75	1	1.3	0.96	---	24.1	89280	1977	LG001
						DCB	4.75	1	1.3	1.01	---	22.6	89280	1977	LG001
						DCB	4.75	1	1.3	0.96	---	31.2	89280	1977	LG001
						DCB	4.75	1	1.3	0.93	---	24.4	89280	1977	LG001
						DCB	4.75	1	1.3	0.94	---	24.6	89280	1977	LG001
						DCB	4.75	1	1.3	0.97	---	22.4	89280	1977	LG001
						DCB	4.75	1	1.3	1.13	---	20.5	89280	1977	LG001
						DCB	4.75	1	1.3	1.1	---	25.6	89280	1977	LG001
						DCB	4.75	1	1.3	0.9	---	24.1	89280	1977	LG001
T736	F	R.T.	L-T	65.9	3.5% NaCl	TDCB	5	1.25	3.1	---	---	30.6	---	1971	84360
			S-L	65.7	3.5% NaCl	CT	1	0.5	---	---	24.8	18.7	61740	1972	83242
T73652	F	R.T.	L-T	68	F.C.S.	DCB	5.5	1	6	---	44	>27.6	76140	1976	RI006
						DCB	5.5	1	6	---	44	>27.8	76140	1976	RI006
					S.C.S.	DCB	5.5	1	6	---	44	27.7	76200	1976	RI006
						DCB	5.5	1	6	---	44	27.5	76200	1976	RI006

TABLE 8.16.3.3 (CONCLUDED)

K_{Iscc} SUMMARY FOR ALUMINUM ALLOY 7175

Condition/ Heat Treat	Prod Form	Test Temp (°F)	Spec Or.	Yield Str (Ksi)	Envir.	Specimen Design	Specimen Width (in)	Specimen Thick (in)	Prod Thk (in)	Crack (in)	K_Q (Ksi√in)	K_{Iscc} (Ksi√in)	Test Time (min)	Test Date	Refer
T73652 (cont'd)	F (cont'd)	R.T. (cont'd)	L-T (cont'd)	68 (cont'd)	S.T.W.	DCB	5.5	1	6	---	44	>21.5	133680	1976	RI006
						DCB	5.5	1	6	---	44	>21.5	133680	1976	RI006
						DCB	5.5	1	6	---	44	>22.5	123600	1976	RI006
						DCB	5.5	1	6	---	44	>22.5	133680	1976	RI006
			T-L	63.5	JP-4 Fuel	BWOL	3.085	1.252	1.25	1.37	---	>17	148320	1977	MA005
						BWOL	3.087	1.252	1.25	1.4	---	>16.8	148320	1977	MA005
					Sim. Sea Water	BWOL	3.086	1.247	1.25	1.7	---	>17.7	132480	1977	MA005
						BWOL	3.087	1.248	1.25	1.41	---	>17.6	132480	1977	MA005
				64	S.T.W.	DCB	5.5	1	6	---	40	22	133680	1976	RI006
						DCB	5.5	1	6	---	40	>18	133680	1976	RI006
						DCB	5.5	1	6	---	40	>18.5	133680	1976	RI006
						DCB	5.5	1	6	---	40	>18.5	133680	1976	RI006
			S-T	57.5	JP-4 Fuel	BWOL	3.086	1.248	1.25	1.41	---	>18.2	148320	1977	MA005
						BWOL	3.084	1.252	1.25	1.35	---	>17.9	148320	1977	MA005
					Sim. Sea Water	BWOL	3.084	1.248	1.25	1.38	---	>17	132480	1977	MA005
						BWOL	3.086	1.248	1.25	1.37	---	>17.6	132480	1977	MA005

TABLE 8.17.1.1

MEAN PLANE STRAIN FRACTURE TOUGHNESS FOR ALUMINUM 7000/8000 SERIES ALLOY 7178 AT ROOM TEMPERATURE

Product Form	Condition/Heat Treatment	K_{Ic} ($ksi\sqrt{in}$)								
		Specimen Orientation								
		L-T			T-L			S-L		
		Mean K_{Ic}	Std Dev	n	Mean K_{Ic}	Std Dev	n	Mean K_{Ic}	Std Dev	n
Plate	T651	25.3	1.9	5	21.5	1.8	10	15.	0.3	3
	T7651	27.8	1.8	16	23.1	2.4	18	17.3	0.4	5
Extrusion	T6510	---	---	---	18.5	1.3	6	14.5	0.1	2
	T76510	30.5	0.9	6	26.8	1.1	5	16.2	0.4	2
	T76511	25.7	0.3	2	---	---	---	---	---	---
Forged Bar	T76510	---	---	---	19.2	1.2	5	---	---	---

TABLE 8.17.1.2.1

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF STRESS INTENSITY FACTOR ΔK 7178 AT ROOM TEMPERATURE

ORIENTATION: L-T **ENVIRONMENT: Distilled Water**

CONDITION/ HEAT TREATMENT	PRODUCT FORM	R	FREQ (Hz)	*FCGR* (10^{-6} *in/cycle*)					
				ΔK *Level* (*Ksi√in*)					
				2.5	5.0	10.0	20.0	50.0	100.0
T76	SHEET	0.02			0.85	11.5	83.11		

TABLE 8.17.1.2.2

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF STRESS INTENSITY FACTOR ΔK 7178 AT ROOM TEMPERATURE

ORIENTATION: L-T **ENVIRONMENT: H.H.A.**

CONDITION/ HEAT TREATMENT	PRODUCT FORM	R	FREQ (Hz)	FCGR (10^{-6} in/cycle) ΔK Level (Ksi√in)					
				2.5	5.0	10.0	20.0	50.0	100.0
T6	SHEET	0.	9		0.79	21.79			
		0.05	9		0.71	10.46			
		0.05	9			24.71	145.22		
		0.5	9	0.2	2.99				
		0.5	9		6.33	53.38			
		0.6	9		9.94	91.29			

TABLE 8.17.1.2.3

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF STRESS INTENSITY FACTOR ΔK 7178 AT ROOM TEMPERATURE

ORIENTATION: L-T **ENVIRONMENT: Lab Air**

CONDITION/ HEAT TREATMENT	PRODUCT FORM	R	FREQ (Hz)	*FCGR* (10^{-6} *in/cycle*) ΔK Level (Ksi√in) 2.5	5.0	10.0	20.0	50.0	100.0
T6	SHEET	0.02	1				109.75		
		0.02	5			12.3			
		0.02	13			9.77			
		0.02	14			12.22	89.91		
		0.5	1			39.26			
		0.5	3			59.88			
		0.5	14			44.51			
T651	SHEET	0.02	0.1-12		0.92	15.34	104.72		
	PLATE	0.	20		0.81	13.19	54.46		
		0.02	0.1-12		1.12	17.2	151.49		
		0.02	0.1-12		0.91	14.1	86.56		
T76	SHEET	0.02	---		0.64	7.18	58.42		
		0.02	---		0.59	7.09	64.88		
T7651	PLATE	0.33	5.2			13.65			
		0.33	5.2			11.95			
		0.33	5.2			12.47			

TABLE 8.17.1.2.3 (CONCLUDED)

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF STRESS INTENSITY FACTOR ΔK 7178 AT ROOM TEMPERATURE

ORIENTATION: L-T **ENVIRONMENT: Lab Air**

CONDITION/ HEAT TREATMENT	PRODUCT FORM	R	FREQ (Hz)	*FCGR* (10^{-6} *in/cycle*) ΔK *Level* ($Ksi\sqrt{in}$) 2.5	5.0	10.0	20.0	50.0	100.0
T76510	EXTRUSION	0.33	5.2			12.63			
		0.33	5.2			12.29			
	EXTRUDED BAR	0.33	5.2			13.47			

TABLE 8.17.1.2.4

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF STRESS INTENSITY FACTOR ΔK
7178 AT ROOM TEMPERATURE

ORIENTATION: L-T **ENVIRONMENT: S.T.W.**

CONDITION/ HEAT TREATMENT	PRODUCT FORM	R	FREQ (Hz)	*FCGR* (10^{-6} *in/cycle*) ΔK Level (Ksi√in) 2.5	5.0	10.0	20.0	50.0	100.0
T651	PLATE	0.	20		0.94	22.93	140.35		
		0.01	6			29.27	153.99		

TABLE 8.17.1.2.5

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF STRESS INTENSITY FACTOR ΔK 7178 AT ROOM TEMPERATURE

ORIENTATION: T-L **ENVIRONMENT: Lab Air**

CONDITION/ HEAT TREATMENT	PRODUCT FORM	R	FREQ (Hz)	*FCGR* (10^{-6} *in/cycle*)					
				ΔK *Level* (*Ksi√in*)					
				2.5	5.0	10.0	20.0	50.0	100.0
T651	PLATE	0.	20		0.56	12.12	82.3		
T7651	PLATE	0.33	5.2			13.23			
		0.33	5.2			16.22			

TABLE 8.17.1.2.6

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF STRESS INTENSITY FACTOR ΔK 7178 AT ROOM TEMPERATURE

ORIENTATION: T-L **ENVIRONMENT: S.T.W.**

CONDITION/ HEAT TREATMENT	PRODUCT FORM	R	FREQ (Hz)	*FCGR* (10^{-6} *in/cycle*)					
				ΔK *Level* (*Ksi√in*)					
				2.5	5.0	10.0	20.0	50.0	100.0
T651	PLATE	0.01	6			24.57	196.46		

TABLE 8.17.2.1

ALUMINUM 7178 K_{Ic}

CONDITION	PRODUCT FORM	PRODUCT THICK (in.)	TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN WIDTH (in.) W	SPECIMEN THICK (in.) B	SPECIMEN DESIGN	CRACK LENGTH (in.) A	2.5 * $(K_{Ic}/TYS)^2$ (in.)	K_{Ic} (Ksi * $\sqrt{in.}$)	K_{Ic} MEAN	STAN DEV	DATE	REFER
T651	Plate	1.00	R.T.	L-T	81.0	2.000	1.048	NB	1.060	0.27	26.50	25.3	1.9	1973	86213
		1.00			81.0	2.000	1.048	NB	1.050	0.24	25.10			1973	86213
		1.00			81.0	2.000	1.048	NB	1.040	0.26	26.00			1973	86213
		1.00			81.0	2.000	1.048	NB	1.030	0.27	26.70			1973	86213
		0.50			82.4	1.000	0.500	NB	0.499	0.18	22.10			1969	77140
T651	Plate	1.37	R.T.	T-L	77.8	2.000	0.999	CT	1.065	0.18	20.80	21.5	1.8	1969	77140
		1.37			77.8	2.000	0.999	CT	1.052	0.18	20.60			1969	77140
		1.37			77.8	1.930	0.999	NB	0.956	0.17	20.50			1969	77140
		1.37			77.8	1.940	0.999	NB	0.944	0.16	19.80			1969	77140
		0.50			78.8	0.990	0.460	NB	0.510	0.14	18.60			1969	77140
		0.50			78.8	1.000	0.500	NB	0.496	0.17	20.80			1969	77140
		1.00			80.8	2.000	1.048	NB	1.060	0.21	23.40			1973	86213
		1.00			80.8	2.000	1.048	NB	1.040	0.20	23.00			1973	86213
		1.00			80.8	2.000	1.048	NB	1.060	0.20	22.90			1973	86213
		1.00			80.8	2.000	1.048	NB	1.050	0.22	24.20			1973	86213
T651	Plate	1.37	R.T.	S-L	68.1	1.000	0.500	CT	0.494	0.12	14.80	15.0	0.3	1973	86213
		1.37			68.1	1.000	0.500	CT	0.508	0.12	15.00			1973	86213
		1.37			68.1	1.000	0.500	CT	0.483	0.13	15.30			1973	86213
T651	Extrusion	0.75	82	T-L	72.0	1.500	0.739	NB	0.725	0.27	23.70	24.1	0.5	1973	86213
		0.75			72.0	1.500	0.739	NB	0.787	0.29	24.40			1973	86213
T6510	Extrusion	3.50	R.T.	T-L	69.2	0.990	0.500	NB	0.461	0.14	16.50	18.5	1.3	1969	77140
		3.50			69.2	2.000	1.001	CT	1.041	0.17	18.30			1969	77140
		3.50			69.2	1.990	1.000	CT	1.030	0.16	17.70			1969	77140

TABLE 8.17.2.1 (CONTINUED)

ALUMINUM 7178 K_{Ic}

CONDITION	PRODUCT FORM	PRODUCT THICK (in.)	TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN WIDTH (in.) W	SPECIMEN THICK (in.) B	SPECIMEN DESIGN	CRACK LENGTH (in.) A	2.5 * $(K_{Ic}/TYS)^2$ (in.)	K_{Ic} (Ksi * $\sqrt{in.}$)	K_{Ic} MEAN	K_{Ic} STAN DEV	DATE	REFER
T6510 Cont'd	Extrusion Cont'd	0.68	R.T. Cont'd	T-L Cont'd	82.9	1.490	0.626	NB	0.742	0.15	20.40	Cont'd	Cont'd	1969	77140
		0.68			83.4	1.500	0.648	NB	0.701	0.13	19.20			1969	77140
		0.68			83.4	1.490	0.625	NB	0.697	0.13	18.80			1969	77140
T6510	Extrusion	3.50	R.T.	S-L	62.3	2.000	0.998	CT	0.994	0.14	14.50	14.5	0.1	1969	77140
		3.50			62.3	2.000	1.001	CT	0.997	0.13	14.40			1969	77140
T7651	Plate	0.50	R.T.	L-T	71.2	0.998	0.447	NB	0.519	0.42	29.90	27.8	1.8	1978	MPC01
		0.50			71.2	0.990	0.446	NB	0.505	0.42	29.50			1978	MPC01
		0.50			71.2	1.000	0.483	NB	0.530	0.40	29.00			1978	MPC01
		0.50			71.2	0.990	0.447	NB	0.507	0.41	28.80			1973	86213
		0.50			71.2	0.990	0.446	NB	0.499	0.41	29.00			1973	86213
		1.00			71.2	2.000	1.001	NB	1.030	0.48	31.20			1973	86213
		0.50			71.2	0.990	0.482	NB	0.525	0.40	28.50			1973	86213
		1.00			71.2	2.000	1.001	NB	1.060	0.44	29.80			1973	86213
		1.37			72.6	2.014	1.001	NB	1.007	0.30	26.00			1978	MPC01
		1.37			72.6	2.011	0.999	CT	1.086	0.30	26.10			1978	MPC01
		1.37			72.6	2.000	1.000	CT	0.997	0.33	26.30			1973	86213
		1.37			72.6	2.000	1.000	CT	1.000	0.32	26.40			1978	MPC01
		1.37			72.6	1.982	1.000	CT	0.991	0.32	26.30			1978	MPC01
		1.37			72.6	2.004	1.001	NB	1.002	0.32	26.70			1978	MPC01
		1.00			74.4	2.004	0.970	CT	1.062	0.28	25.40			1978	MPC01
		1.00			74.4	1.998	0.972	CT	1.079	0.30	26.50			1978	MPC01

TABLE 8.17.2.1 (CONTINUED)

ALUMINUM 7178 K_{Ic}

CONDITION	PRODUCT FORM	PRODUCT THICK (in.)	TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN WIDTH (in.) W	SPECIMEN THICK (in.) B	SPECIMEN DESIGN	CRACK LENGTH (in.) A	2.5 * $(K_{Ic}/TYS)^2$ (in.)	K_{Ic} (Ksi * √in.)	K_{Ic} MEAN	STAN DEV	DATE	REFER
T7651	Plate	2.00	R.T.	T-L	63.8	4.002	2.036	NB	2.201	0.34	23.70	23.1	2.4	1978	MPC01
		2.00			63.8	4.000	2.036	NB	2.105	0.29	21.80			1973	86213
		0.50			69.2	0.994	0.447	NB	0.467	0.27	23.30			1978	MPC01
		0.50			69.2	1.000	0.485	NB	0.520	0.28	24.10			1978	MPC01
		0.50			69.2	1.002	0.448	NB	0.521	0.28	24.10			1978	MPC01
		0.50			69.2	0.998	0.485	NB	0.529	0.32	25.40			1978	MPC01
		1.00			69.9	2.002	0.974	CT	1.041	0.18	19.10			1978	MPC01
		1.00			69.9	2.002	0.973	CT	1.061	0.18	19.30			1978	MPC01
		1.00			70.5	2.000	1.001	NB	1.080	0.40	28.30			1978	MPC01
		1.00			70.5	2.000	1.001	NB	1.040	0.38	27.70			1978	MPC01
		1.37			71.1	2.000	1.000	CT	1.022	0.26	22.80			1973	86213
		1.37			71.1	1.988	0.999	CT	0.994	0.25	23.00			1978	MPC01
		1.37			71.1	2.000	1.001	NB	0.993	0.24	22.10			1973	86213
		1.37			71.1	2.012	1.000	NB	1.046	0.25	23.30			1978	MPC01
		1.37			71.1	2.000	1.001	NB	1.048	0.25	22.40			1973	86213
		1.37			71.1	2.000	1.001	NB	1.000	0.24	22.30			1978	MPC01
		1.37			71.1	2.000	0.999	CT	1.020	0.21	21.20			1978	MPC01
		1.37			71.1	1.990	0.999	CT	1.015	0.24	22.60			1978	MPC01
T7651	Plate	1.37	R.T.	S-L	66.8	1.000	0.500	CT	0.480	0.15	16.80	17.3	0.4	1978	MPC01
		1.37			66.8	1.000	0.500	CT	0.494	0.17	17.60			1973	86213
		1.37			66.8	1.010	0.500	CT	0.495	0.15	17.10			1978	MPC01
		1.37			66.8	1.002	0.500	CT	0.501	0.16	17.90			1978	MPC01
		1.37			66.8	1.000	0.500	CT	0.487	0.17	17.20			1973	86213

TABLE 8.17.2.1 (CONTINUED)

ALUMINUM 7178 K_{Ic}

CONDITION	PRODUCT FORM	PRODUCT THICK (in.)	TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN WIDTH (in.) W	SPECIMEN THICK (in.) B	SPECIMEN DESIGN	CRACK LENGTH (in.) A	2.5 * $(K_{Ic}/TYS)^2$ (in.)	K_{Ic} K_{Ic} (Ksi * $\sqrt{in.}$)	K_{Ic} MEAN	STAN DEV	DATE	REFER
T76510	Extrusion	3.50	R.T.	L-S	61.4	2.000	1.001	NB	1.029	0.71	32.80	33.0	0.2	1973	86213
		3.50			63.0	2.000	1.002	NB	1.096	0.69	33.10			1973	86213
T76510	Extrusion	3.50	R.T.	L-T	61.4	2.000	1.000	NB	1.012	0.60	30.00	30.5	0.9	1973	86213
		0.68			67.6	1.500	0.655	NB	0.702	0.50	30.30			1973	86213
		0.68			68.0	1.490	0.656	NB	0.665	0.48	29.90			1973	86213
		0.68			69.4	1.490	0.663	NB	0.767	0.52	31.60			1973	86213
		0.68			69.4	1.490	0.659	NB	0.673	0.45	29.40			1973	86213
		0.68			69.4	1.500	0.620	NB	0.772	0.52	31.70			1973	86213
T76510	Extrusion	0.68	R.T.	T-L	66.2	1.490	0.658	NB	0.670	0.41	26.90	26.8	1.1	1973	86213
		0.68			66.2	1.490	0.625	NB	0.703	0.46	28.50			1973	86213
		0.68			66.7	1.490	0.658	NB	0.708	0.41	27.10			1973	86213
		0.68			66.7	1.490	0.624	NB	0.670	0.38	25.90			1973	86213
		0.68			66.7	1.500	0.649	NB	0.780	0.37	25.70			1973	86213
T76510	Extrusion	3.50	R.T.	S-L	54.4	2.000	1.000	CT	0.937	0.21	15.90	16.2	0.4	1973	86213
		3.50			54.4	2.000	0.999	CT	0.946	0.23	16.40			1973	86213
T76510	Forged Bar	3.50	R.T.	T-L	57.2	1.000	0.500	NB	0.473	0.28	19.30	19.2	1.2	1973	86213
		3.50			58.4	2.000	1.001	CT	0.943	0.23	17.70			1973	86213
		3.50			58.4	2.000	1.001	CT	0.931	0.25	18.50			1973	86213
		3.50			58.4	1.000	0.500	NB	0.482	0.28	19.60			1973	86213
		3.50			61.9	1.000	0.500	NB	0.459	0.29	20.90			1973	86213
T76511	Extrusion	0.40	R.T.	L-T	74.7	1.000	0.401	NB	0.467	0.29	25.50	25.7	0.3	1973	86213
		1.44			76.6	3.000	1.400	CT	1.571	0.29	25.90			1973	86213

TABLE 8.17.2.1 (CONCLUDED)

ALUMINUM 7178 K_{Ic}

CONDITION	PRODUCT		TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN			CRACK LENGTH (in.) A	2.5 * $(K_{Ic}/TYS)^2$ (in.)	K_{Ic}			DATE	REFER
	FORM	THICK (in.)				WIDTH (in.) W	THICK (in.) B	DESIGN			K_{Ic} (Ksi * $\sqrt{in.}$)	K_{Ic} MEAN	STAN DEV		
T76511	Extrusion	1.44	R.T.	T-L	75.0	3.000	1.401	CT	1.578	0.18	20.30	---	---	1973	86213
T76511	Extrusion	1.25	83	L-T	68.5	3.000	1.227	NB	1.457	0.41	27.70	28.5	1.1	1973	86213
		1.25			68.5	3.000	1.217	NB	1.465	0.45	29.20			1973	86213
T76511	Extrusion	1.25	83	T-L	67.6	3.000	1.170	NB	1.470	0.37	26.00	26.0	0.0	1973	86213
		1.25			67.6	3.000	1.166	NB	1.463	0.37	26.00			1973	86213
T76511	Extrusion	1.44	84	S-L	69.1	2.000	0.821	CT	0.998	0.26	22.20	20.1	3.0	1973	86213
		1.44			69.1	2.000	0.821	CT	1.000	0.17	18.00			1973	86213
T76511	Extrusion	2.00	86	L-T	72.3	4.000	1.961	CT	2.078	0.34	26.50	26.2	0.4	1973	86213
		2.00			72.3	4.000	1.962	CT	2.077	0.32	25.90			1973	86213
T76511	Extrusion	2.00	86	S-L	64.4	1.500	0.750	CT	0.735	0.16	16.20	16.2	0.0	1973	86213
		2.00			64.4	1.500	0.750	CT	0.746	0.16	16.20			1973	86213

TABLE 8.17.2.2

ALUMINUM 7178 K_C

CONDITION HEAT TREAT	PRODUCT FORM	PRODUCT THICK (in.)	TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN WIDTH (in.) W	SPECIMEN THICK (in.) B	CRACK LENGTH INIT (in.) $2a_o$	CRACK LENGTH FINAL (in.) $2a_f$	GROSS STRESS ONSET (Ksi) σ_o	GROSS STRESS MAX (Ksi) σ_{Max}	K_{app} (Ksi√in)	K_{app} MEAN	K_{app} STAN DEV	K_C (Ksi√in)	K_C MEAN	K_C STAN DEV	DATE	REFER
BUCKLING OF CRACK EDGES NOT RESTRAINED																			
		0.06			82.4	2.000	0.064	0.621	0.812	---	37.20	39.05			46.87			1973	86213
		0.06			82.4	2.000	0.064	0.621	0.790	---	35.70	37.48			44.09			1973	86213
		0.06			82.4	2.000	0.064	0.622	0.825	---	36.90	38.81			47.00			1973	86213
		0.06			82.4	2.000	0.064	0.625	0.760	---	31.30	32.99			37.60			1973	86213
		0.06			82.4	2.000	0.064	0.625	0.860	---	36.10	38.05			47.49			1973	86213
		0.06			82.4	2.000	0.064	0.620	---	---	35.70	37.48			---			1973	86213
T6	Sheet	0.06	R.T.	L-T	82.4	2.000	0.064	0.625	0.770	---	37.80	39.84	39.9	3.1	45.83	46.3	3.3	1973	86213
		0.06			82.6	2.000	0.064	0.621	0.780	---	42.50	44.61			52.01*			1973	86213
		0.06			83.4	2.000	0.064	0.624	0.770	---	40.40	42.58			48.99			1973	86213
		0.06			83.4	2.000	0.064	0.622	0.790	---	40.20	42.29			49.65			1973	86213
		0.06			83.4	2.000	0.064	0.625	0.760	---	39.70	41.84			47.70			1973	86213
		0.06			83.4	2.000	0.064	0.624	0.740	---	38.50	40.58			45.40			1973	86213
		0.06			82.6	2.000	0.065	0.622	0.750	---	41.20	43.34			49.04			1973	86213
		0.12			83.6	3.000	0.122	0.999	1.360	---	25.60	34.43			43.01			1973	86213
		0.12			83.6	2.990	0.123	0.994	1.340	---	27.00	36.24			44.87			1973	86213
		0.12			83.6	2.990	0.123	0.998	1.320	---	27.60	37.14			45.32			1973	86213
T6	Sheet	0.12	R.T.	L-T	83.6	3.000	0.123	1.090	1.390	---	31.00	44.22	40.9	4.1	53.01	50.4	5.0	1973	86213
		0.12			83.6	3.000	0.123	1.090	1.360	---	31.20	44.50			52.41			1973	86213
		0.12			83.6	3.000	0.123	0.994	1.350	---	27.40	36.76			45.76			1973	86213

* NOTE: NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STANDARD DEVIATION.

TABLE 8.17.2.2 (CONTINUED)

ALUMINUM 7178 K_C

CONDITION HEAT TREAT	PRODUCT FORM	PRODUCT THICK (in.)	TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN WIDTH (in.) W	SPECIMEN THICK (in.) B	CRACK LENGTH INIT (in.) $2a_o$	CRACK LENGTH FINAL (in.) $2a_f$	GROSS STRESS ONSET (Ksi) σ_o	GROSS STRESS MAX (Ksi) σ_{Max}	K_{app} (Ksi$\sqrt{in}$)	K_{app} MEAN	K_{app} STAN DEV	K_c (Ksi$\sqrt{in}$)	K_c MEAN	K_c STAN DEV	DATE	REFER
BUCKLING OF CRACK EDGES NOT RESTRAINED																			
T6 Cont'd	Sheet Cont'd	0.12	R.T. Cont'd	L-T Cont'd	75.3	3.000	0.124	1.000	1.340	---	35.30	47.54	Cont'd	Cont'd	58.60*	Cont'd	Cont'd	1973	86213
		0.12			75.3	3.000	0.124	1.000	1.320	---	33.50	45.12			54.95			1973	86213
		0.12			83.3	3.000	0.125	1.000	1.370	---	33.10	44.58			55.94			1973	86213
		0.12			83.3	3.000	0.125	1.000	1.400	---	34.10	45.92			58.66			1973	86213
		0.12			83.5	3.000	0.125	1.080	1.400	---	27.60	39.12			47.48			1973	86213
		0.12			83.5	3.000	0.125	1.000	1.420	---	29.50	39.73			51.35			1973	86213
		0.12			83.5	3.000	0.125	1.060	1.330	---	27.80	38.91			45.88			1973	86213
		0.12			82.5	3.000	0.128	1.000	1.470	---	28.70	38.65			51.46			1973	86213
		0.12			82.5	3.000	0.129	1.000	1.500	---	30.40	40.94			55.49			1973	86213
T6	Sheet	0.06	R.T.	L-T	81.6	15.820	0.064	1.000	1.000	---	38.20	47.99	46.5	1.7	47.99	47.8	2.2	1973	86213
		0.06			81.6	15.820	0.064	4.000	4.000	---	17.20	44.90			44.90			1973	86213
		0.06			81.6	15.820	0.064	3.030	3.260	---	21.20	47.33			49.27			1973	86213
		0.06			81.6	15.810	0.065	6.000	6.320	---	13.20	44.55			46.23			1973	86213
		0.06			81.6	15.820	0.066	3.020	3.310	---	21.50	47.91			50.39			1973	86213
T6	Sheet	0.06	R.T.	T-L	77.8	2.000	0.064	0.625	0.740	---	33.60	35.41	36.7	2.3	39.62	44.6	2.5	1973	86213
		0.06			77.8	2.000	0.064	0.622	0.795	---	35.30	37.13			43.75			1973	86213
		0.06			77.8	2.000	0.064	0.621	0.785	---	36.90	38.74			45.32			1973	86213
		0.06			77.8	2.000	0.064	0.623	0.805	---	37.10	39.02			46.41			1973	86213
		0.06			77.8	2.000	0.064	0.625	0.780	---	36.90	38.89			45.16			1973	86213

* NOTE: NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STANDARD DEVIATION.

TABLE 8.17.2.2 (CONTINUED)

ALUMINUM 7178 K_C

CONDITION HEAT TREAT	PRODUCT		TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN		CRACK LENGTH		GROSS STRESS		K_{app}			K_C			DATE	REFER
	FORM	THICK (in.)				WIDTH (in.) W	THICK (in.) B	INIT (in.) $2a_o$	FINAL (in.) $2a_f$	ONSET (Ksi) σ_o	MAX (Ksi) σ_{Max}	K_{app} (Ksi$\sqrt{in}$)	K_{app} MEAN	STAN DEV	K_C (Ksi$\sqrt{in}$)	K_C MEAN	STAN DEV		
BUCKLING OF CRACK EDGES NOT RESTRAINED																			
T6 Cont'd	Sheet Cont'd	0.06	R.T. Cont'd	T-L Cont'd	77.8	2.000	0.064	0.625	0.920	---	33.00	34.78	Cont'd	Cont'd	45.80	Cont'd	Cont'd	1973	86213
		0.06			77.8	2.000	0.064	0.619	0.845	---	35.60	37.30			46.17			1973	86213
		0.06			80.4	2.000	0.065	0.627	0.850	---	37.00	39.08			48.24			1973	86213
		0.06			80.4	2.000	0.065	0.628	0.850	---	32.30	34.18			42.12			1973	86213
		0.06			81.0	2.000	0.065	0.627	0.850	---	32.30	34.11			42.12			1973	86213
		0.06			81.0	2.000	0.065	0.627	0.830	---	37.90	40.03			48.54			1973	86213
		0.06			80.4	2.000	0.066	0.626	0.860	---	33.10	34.96			43.55			1973	86213
		0.06			80.4	2.000	0.066	0.627	0.900	---	31.70	33.48			43.22			1973	86213
T6	Sheet	0.12	R.T.	T-L	79.4	2.990	0.123	0.996	1.250	---	21.30	28.63	33.4	2.3	33.54	38.8	3.8	1973	86213
		0.12			79.4	3.000	0.123	0.996	1.200	---	21.20	28.48			32.36			1973	86213
		0.12			75.3	3.000	0.125	1.000	1.000	---	25.90	34.88			34.88			1973	86213
		0.12			75.3	3.000	0.125	1.000	1.000	---	25.90	34.88			34.88			1973	86213
		0.12			77.4	3.000	0.125	1.060	1.440	---	23.50	32.89			41.40			1973	86213
		0.12			77.4	3.000	0.125	1.060	1.440	---	24.50	34.29			43.16			1973	86213
		0.12			77.4	3.000	0.125	1.060	1.270	---	23.50	32.89			37.42			1973	86213
		0.12			78.0	3.000	0.125	1.000	1.230	---	26.20	35.29			40.72			1973	86213
		0.12			78.0	3.000	0.125	1.000	1.300	---	25.90	34.88			41.98			1973	86213
		0.12			79.2	3.000	0.125	1.110	1.300	---	23.60	34.09			38.26			1973	86213
		0.12			79.2	3.000	0.125	1.080	1.380	---	24.20	34.30			41.14			1973	86213

TABLE 8.17.2.2 (CONTINUED)

ALUMINUM 7178 K_C																			
CONDITION HEAT TREAT	PRODUCT		TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN		CRACK LENGTH		GROSS STRESS		K_{app}			K_C			DATE	REFER
	FORM	THICK (in.)				WIDTH (in.) W	THICK (in.) B	INIT (in.) $2a_o$	FINAL (in.) $2a_f$	ONSET (Ksi) σ_o	MAX (Ksi) σ_{Max}	K_{app} (Ksi$\sqrt{in}$)	K_{app} MEAN	STAN DEV	K_c (Ksi$\sqrt{in}$)	K_c MEAN	STAN DEV		
BUCKLING OF CRACK EDGES NOT RESTRAINED																			
T6 Cont'd	Sheet Cont'd	0.12	R.T. Cont'd	T-L Cont'd	78.0	3.000	0.128	1.000	1.390	---	25.30	34.07	Cont'd	Cont'd	43.26	Cont'd	Cont'd	1973	86213
		0.12			78.0	3.000	0.128	1.000	1.320	---	25.40	34.21			41.67			1973	86213
T6	Sheet	0.06	R.T.	T-L	78.6	15.810	0.065	3.010	3.230	---	19.90	44.26	42.1	1.4	46.01	46.5	1.8	1973	86213
		0.06			78.6	15.820	0.065	1.000	1.460	---	32.10	40.33			48.87			1973	86213
		0.06			78.6	15.820	0.065	4.000	4.550	---	16.20	42.29			45.66			1973	86213
		0.06			78.6	15.820	0.065	6.000	6.480	---	12.40	41.84			44.23			1973	86213
		0.06			78.6	15.820	0.065	1.010	1.310	---	33.20	41.92			47.83			1973	86213
T651	Plate	0.25	R.T.	L-T	84.3	4.000	0.254	1.330	1.960	---	23.40	36.33	35.6	1.0	48.45	50.0	2.1	1973	86213
		0.25			84.3	4.000	0.255	1.430	2.290	---	21.40	34.86			51.46			1973	86213
T651	Plate	0.25	R.T.	T-L	79.5	4.000	0.247	1.420	1.680	---	15.10	24.48	24.7	0.3	27.60	27.3	0.4	1973	86213
		0.25			79.5	4.000	0.247	1.390	1.560	---	15.60	24.93			27.00			1973	86213
T651	Plate	0.25	R.T.	T-L	80.4	4.000	0.254	1.330	1.330	---	16.80	26.08	25.7	0.7	26.08	28.5	4.0	1973	86213
		0.25			80.4	4.000	0.254	1.440	2.070	---	15.20	24.88			33.06			1973	86213
		0.25			80.4	4.000	0.255	1.330	1.330	---	16.90	26.24			26.24			1973	86213
T7651	Plate	1.00	R.T.	L-T	71.2	20.000	1.005	7.000	8.640	---	11.90	42.73	42.1	0.7	49.69	48.8	1.0	1973	86213
		1.00			71.2	20.000	1.005	7.000	8.570	---	11.50	41.30			47.72			1973	86213
		1.00			71.2	20.000	1.005	7.000	8.600	---	11.80	42.37			49.09			1973	86213

TABLE 8.17.2.2 (CONCLUDED)

ALUMINUM 7178 K_C

CONDITION HEAT TREAT	PRODUCT		TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN		CRACK LENGTH		GROSS STRESS		K_{app}			K_C			DATE	REFER
	FORM	THICK (in.)				WIDTH (in.) W	THICK (in.) B	INIT (in.) $2a_o$	FINAL (in.) $2a_f$	ONSET (Ksi) σ_o	MAX (Ksi) σ_{Max}	K_{app} (Ksi$\sqrt{in}$)	K_{app} MEAN	STAN DEV	K_C (Ksi$\sqrt{in}$)	K_C MEAN	STAN DEV		
BUCKLING OF CRACK EDGES NOT RESTRAINED																			
T7651	Plate	0.25	R.T.	T-L	71.0	4.000	0.247	1.410	1.610	---	19.80	31.95	32.3	0.5	35.06	36.0	1.4	1973	86213
		0.25			71.0	4.000	0.247	1.460	1.730	---	19.80	32.71			37.01			1973	86213
T7651	Plate	1.00	R.T.	T-L	70.5	20.000	1.005	7.000	7.850	---	8.20	29.45	29.8	0.4	31.88	33.1	1.2	1973	86213
		1.00			70.5	20.000	1.005	7.000	8.050	---	8.40	30.17			33.26			1973	86213
		1.00			70.5	20.000	1.005	7.000	8.500	---	8.30	29.81			34.22			1973	86213

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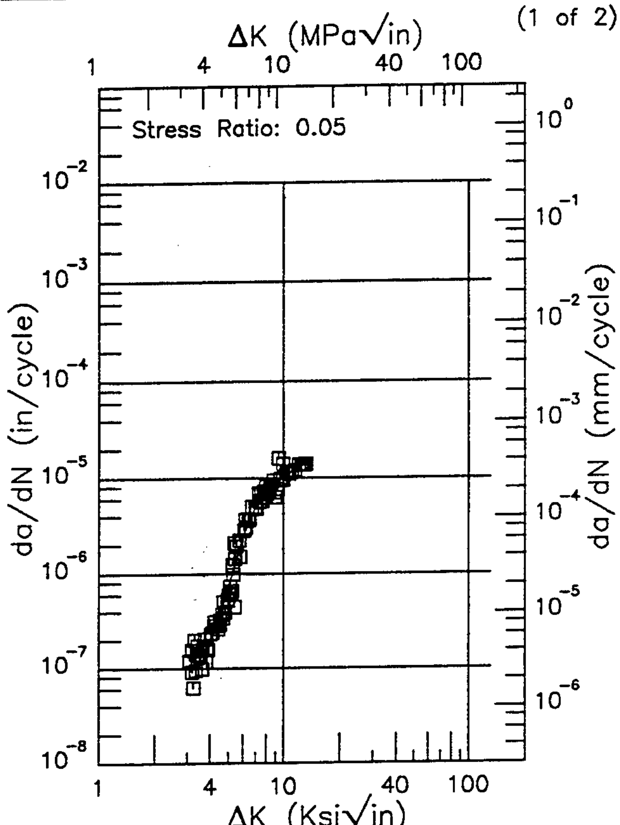
R — 7178

Condition/Ht: T6	Yield Strength: 82 ksi
Form: Sheet	Ult. Strength: 89.7 ksi
Specimen Type: CT	Specimen Thk: 0.19 in.
Orientation: L–T	Specimen Width: 3.75 in.
Frequency: 9 Hz	Ref: BW001
Environment: H.H.A.; RT	

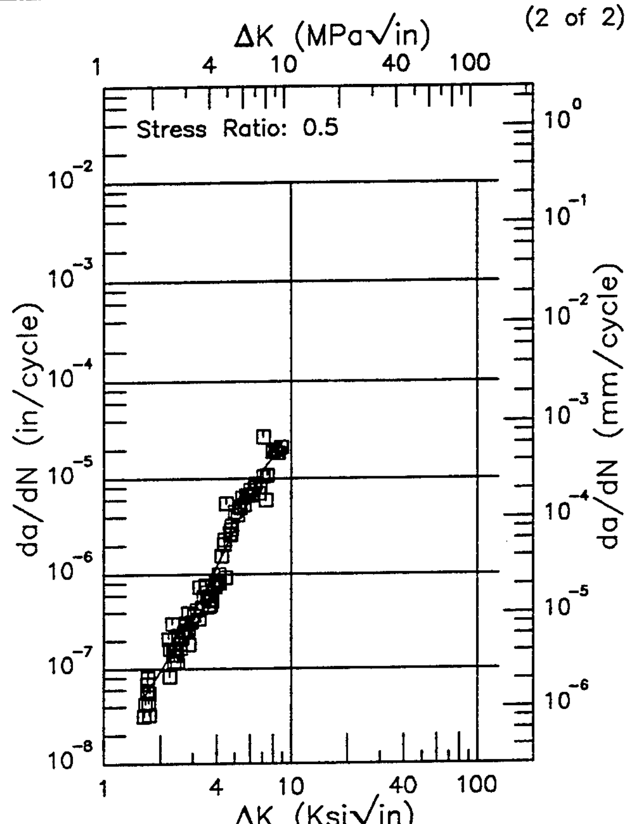
(1 of 2)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
3.09 (min)	0.129
3.5	0.121
4.	0.184
5.	0.708
6.	2.37
7.	4.99
8.	7.33
9.	9.07
10.	10.5
13.	13.9
13.11 (max)	14.0

RMS % Error	Life Prediction Ratio Summary
23.67	0. .5 .8 1.25 2.

(2 of 2)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
1.64 (min)	0.0504
2.	0.0934
2.5	0.198
3.	0.384
3.5	0.692
4.	1.18
5.	2.99
6.	6.57
7.	11.8
8.	16.8
8.87 (max)	19.0

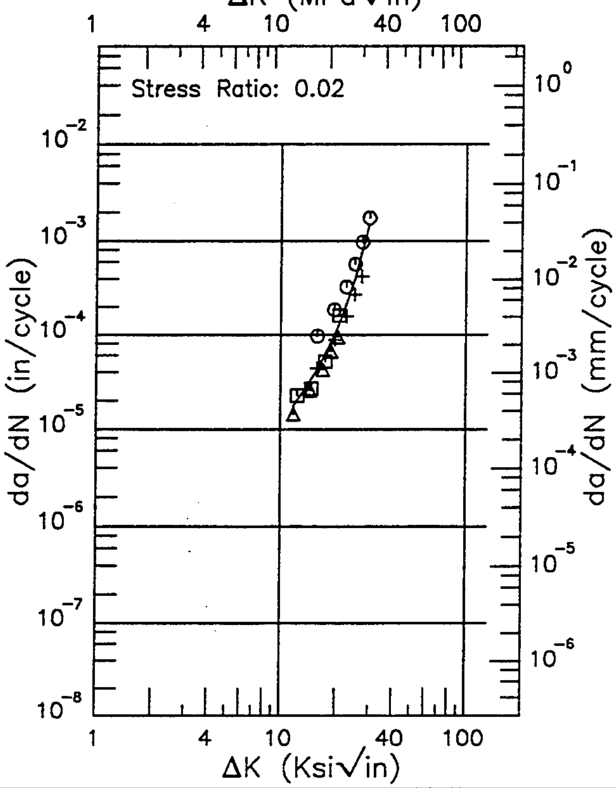
RMS % Error	Life Prediction Ratio Summary
36.40	0. .5 .8 1.25 2.

Figure 8.17.3.1.1

Condition/Ht: T6
Form: 0.2 in. Sheet
Specimen Type: CCP (max load specified)
Orientation: L-T
Frequency: 1 Hz
Environment: LAB AIR; RT

Yield Strength: 81.8 – 86 ksi
Ult. Strength: 88.2 – 90.5 ksi
Specimen Thk: 0.2 in.
Specimen Width: 11.5 in.
Ref: 86088

(1 of 2)



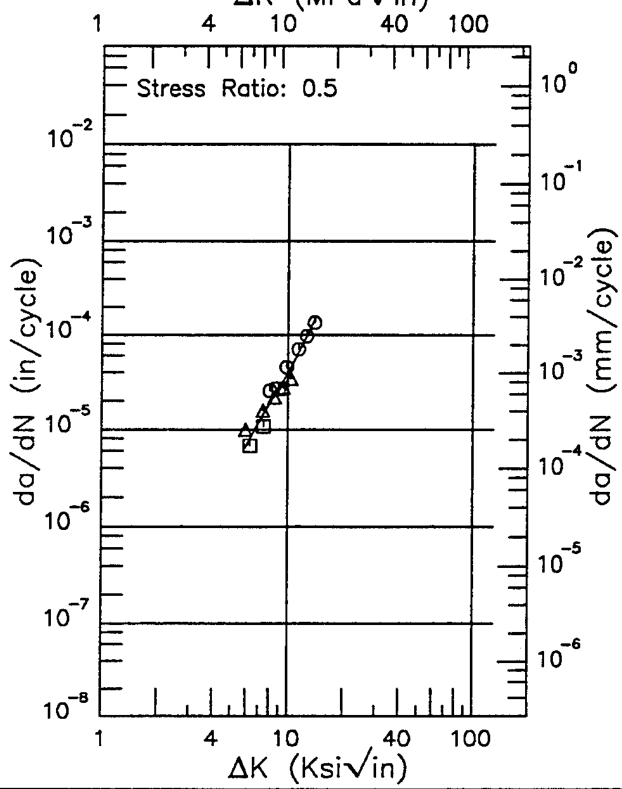
ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
11.70 (min)	17.4
13.	23.1
16.	44.0
20.	110.
25.	390.
29.76 (max)	1458.

RMS % Error: 43.83

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

(2 of 2)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
5.94 (min)	6.50
6.	6.76
7.	11.9
8.	18.7
9.	27.5
10.	39.3
13.	106.
13.88 (max)	141.

RMS % Error: 22.62

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

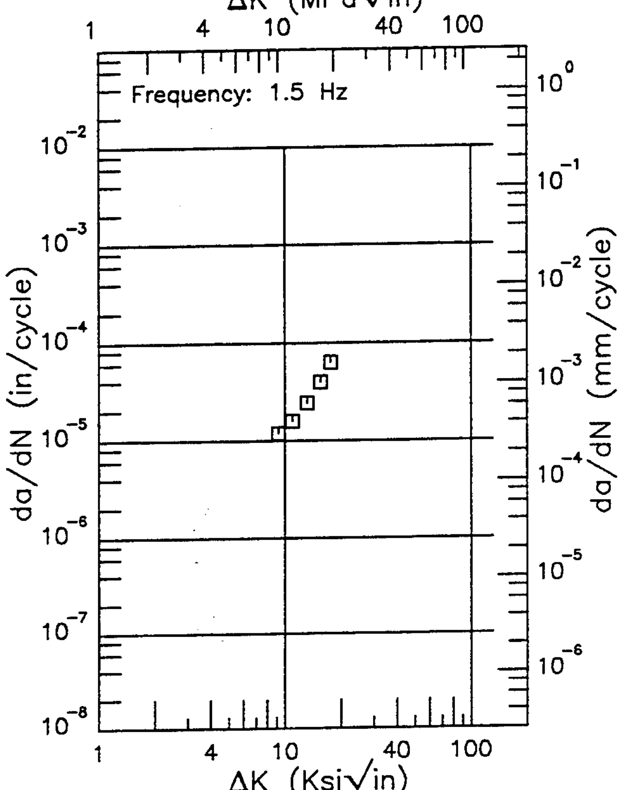
Figure 8.17.3.1.2

F 7178

Condition/Ht: T6
Form: 0.2 in. Sheet
Specimen Type: CCP (max load specified)
Orientation: L–T
Stress Ratio: 0.02
Environment: LAB AIR; RT

Yield Strength: 86 ksi
Ult. Strength: 90.2 ksi
Specimen Thk: 0.2 in.
Specimen Width: 11.5 in.
Ref: 86088

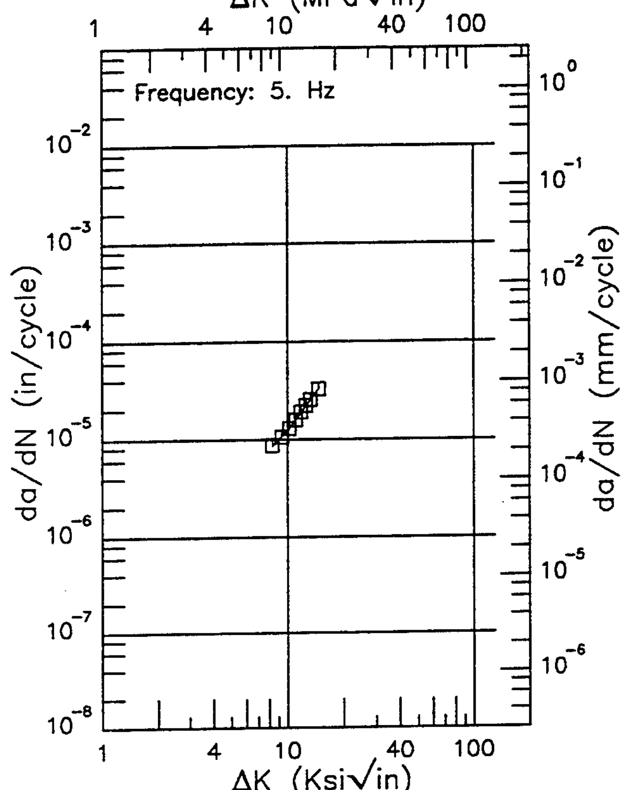
(1 of 3)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

(2 of 3)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
8.28 (min)	8.55
9.	9.99
10.	12.3
13.	24.0
14.65 (max)	32.0

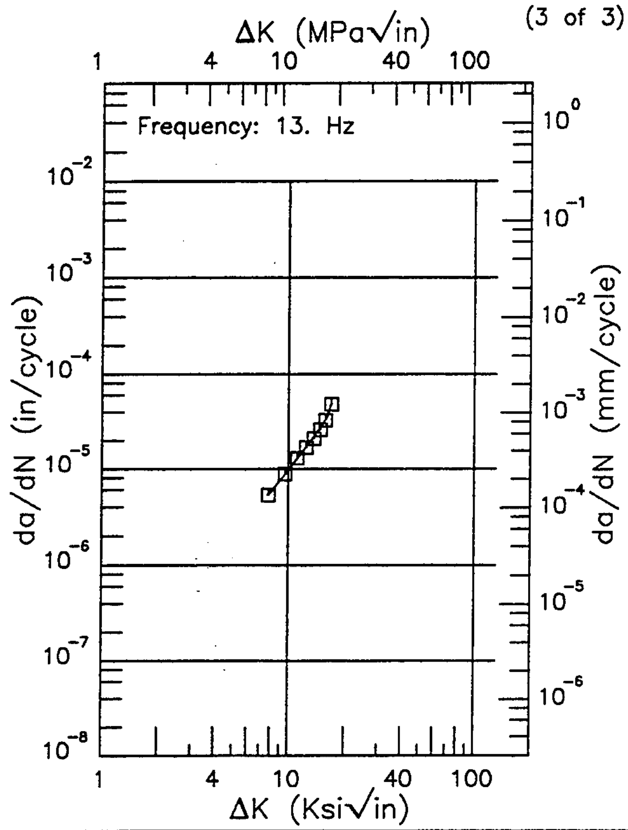
RMS % Error	Life Prediction Ratio Summary
0.44	0. .5 .8 1.25 2.

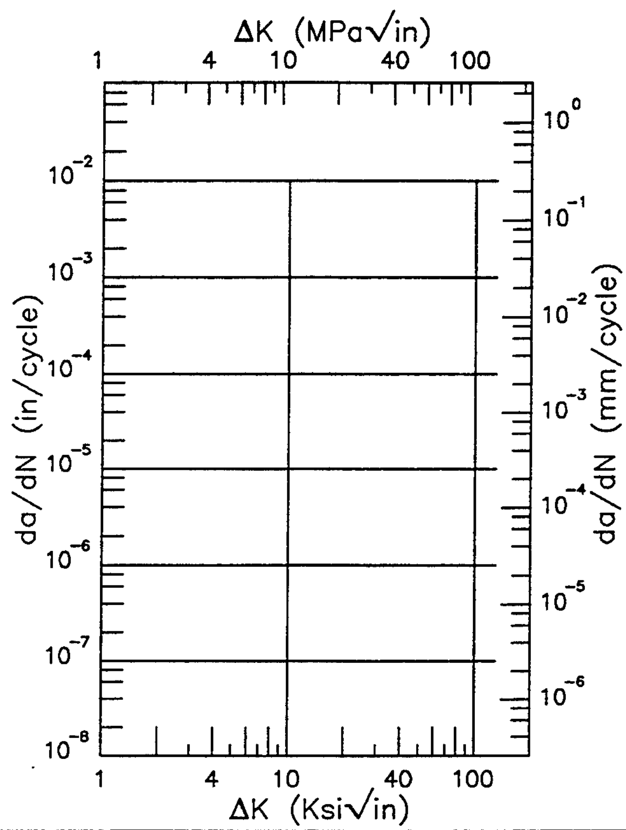
Figure 8.17.3.1.3

Condition/Ht: T6
Form: 0.2 in. Sheet
Specimen Type: CCP (max load specified)
Orientation: L-T
Stress Ratio: 0.02
Environment: LAB AIR; RT

Yield Strength: 86 ksi
Ult. Strength: 90.2 ksi
Specimen Thk: 0.2 in.
Specimen Width: 11.5 in.
Ref: 86088

(3 of 3)





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
7.78 (min)	5.30
8.	5.68
9.	7.54
10.	9.77
13.	18.9
16.	34.8
16.74 (max)	47.4

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error	Life Prediction Ratio Summary
2.53	0. .5 .8 1.25 2.

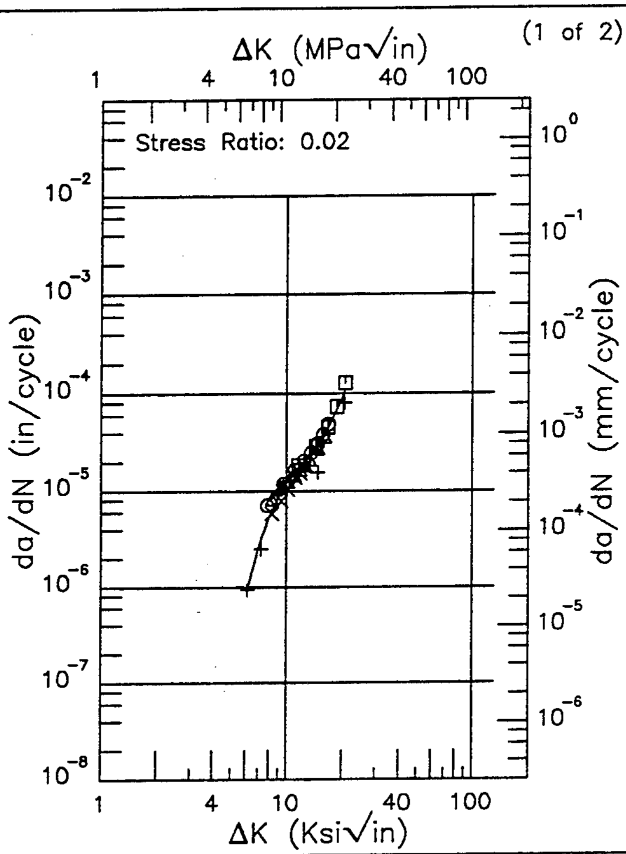
RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

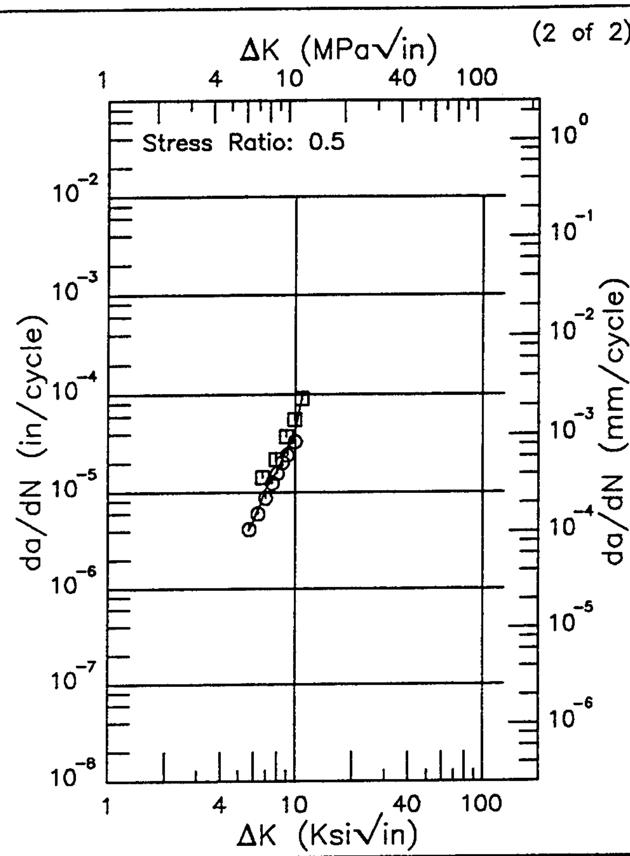
Figure 8.17.3.1.3 (Concluded)

R 7178

Condition/Ht: T6
Form: 0.2 in. Sheet
Specimen Type: CCP (max load specified)
Orientation: L–T
Frequency: 14 Hz
Environment: LAB AIR; RT

Yield Strength: 81.8 – 85 ksi
Ult. Strength: 88.2 – 90.5 ksi
Specimen Thk: 0.2 in.
Specimen Width: 11.5 in.
Ref: 86088





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
6.14 (min)	0.893
7.	2.50
8.	5.37
9.	8.77
10.	12.2
13.	22.3
16.	37.1
20.	89.9
20.58 (max)	105.

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
5.67 (min)	4.04
6.	5.19
7.	10.9
8.	16.5
9.	27.7
10.	44.5
10.80 (max)	90.8

RMS % Error	Life Prediction Ratio Summary
16.65	+× ΔD; 0. .5 .8 1.25 2.

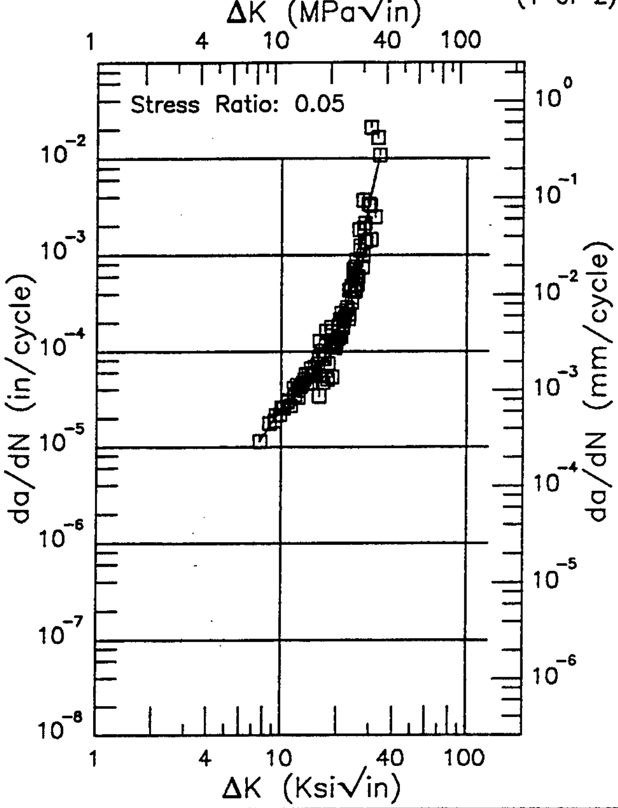
RMS % Error	Life Prediction Ratio Summary
26.97	○ □; 0. .5 .8 1.25 2.

Figure 8.17.3.1.4

Condition/Ht: T6
Form: Sheet
Specimen Type: CCP (max load specified)
Orientation: L–T
Frequency: 9 Hz
Environment: H.H.A.; RT

Yield Strength: 82 ksi
Ult. Strength: 89.7 ksi
Specimen Thk: 0.19 in.
Specimen Width: 6 in.
Ref: BW001

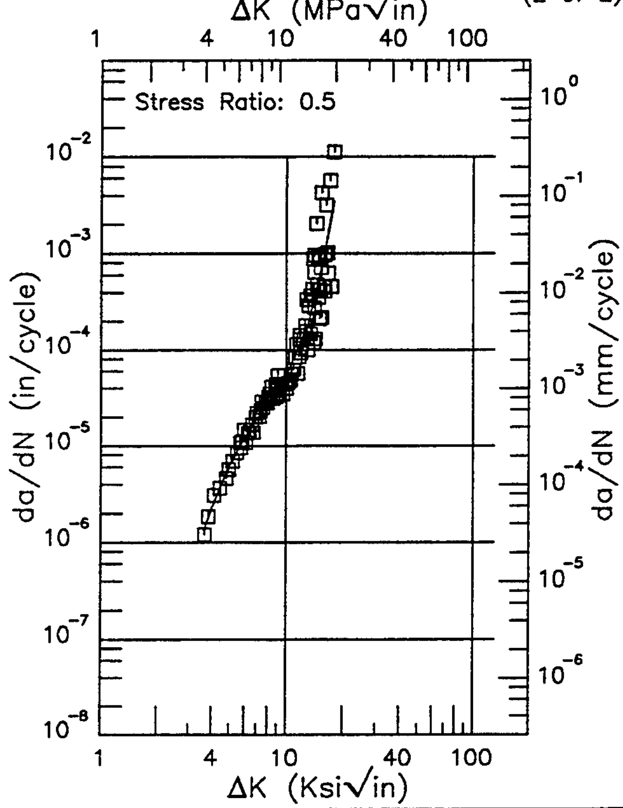
(1 of 2)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
7.65 (min)	11.4
8.	13.3
9.	18.9
10.	24.7
13.	44.3
16.	71.1
20.	145.
25.	624.
30.	4018.
33.50 (max)	10142.

RMS % Error	Life Prediction Ratio Summary
51.34	0. .5 .8 1.25 2.

(2 of 2)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
3.65 (min)	1.34
4.	2.27
5.	6.33
6.	12.0
7.	19.0
8.	27.5
9.	38.3
10.	53.4
13.	180.
16.	949.
17.91 (max)	3484.

RMS % Error	Life Prediction Ratio Summary
86.64	0. .5 .8 1.25 2.

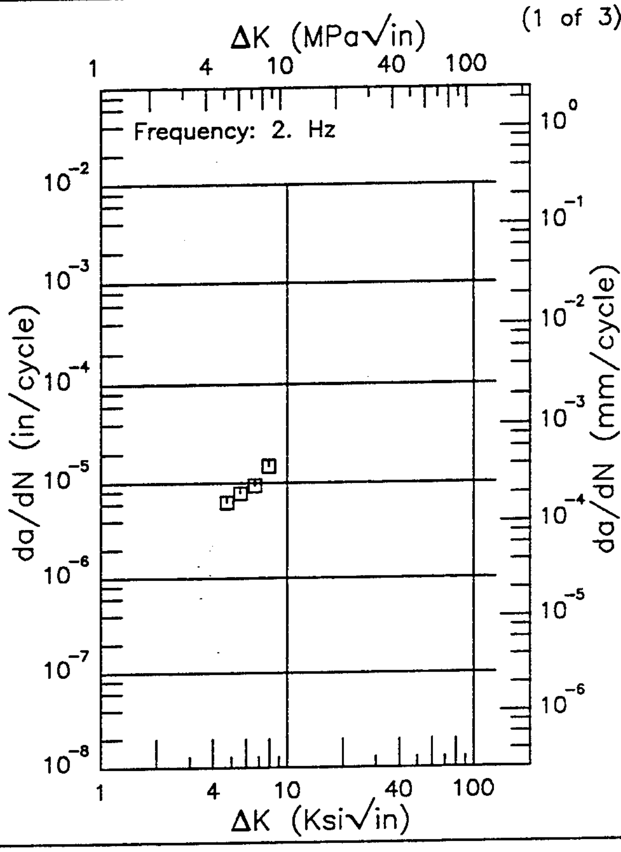
Figure 8.17.3.1.5

F 7178

Condition/Ht: T6
Form: 0.2 in. Sheet
Specimen Type: CCP (max load specified)
Orientation: L–T
Stress Ratio: 0.5
Environment: LAB AIR; RT

Yield Strength: 85 – 86 ksi
Ult. Strength: 90.2 – 90.5 ksi
Specimen Thk: 0.2 in.
Specimen Width: 11.5 in.
Ref: 86088

(1 of 3)



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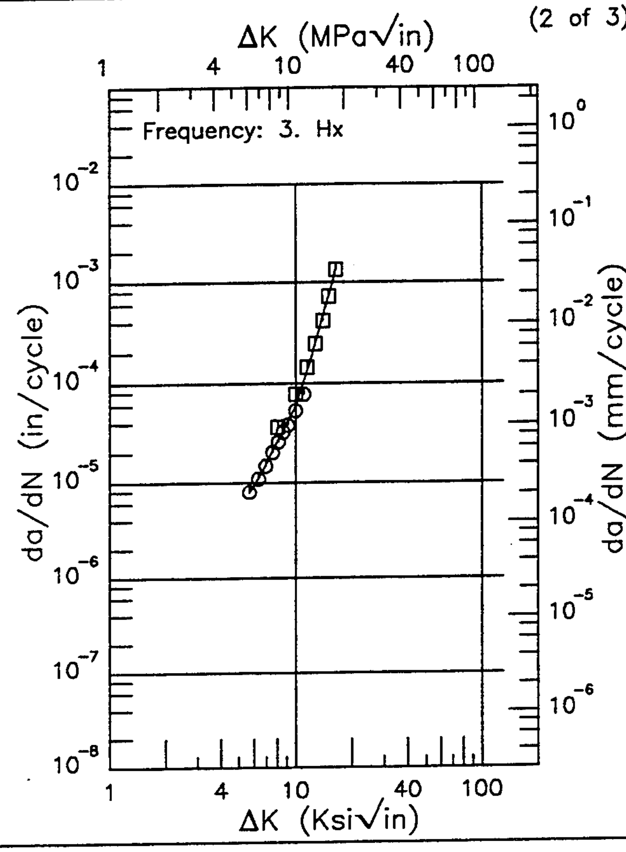


ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)

ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)
5.65 (min)	7.96
6.	9.25
7.	15.8
8.	26.8
9.	40.7
10.	59.9
13.	280.
16.	1077.
16.38 (max)	1340.

RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

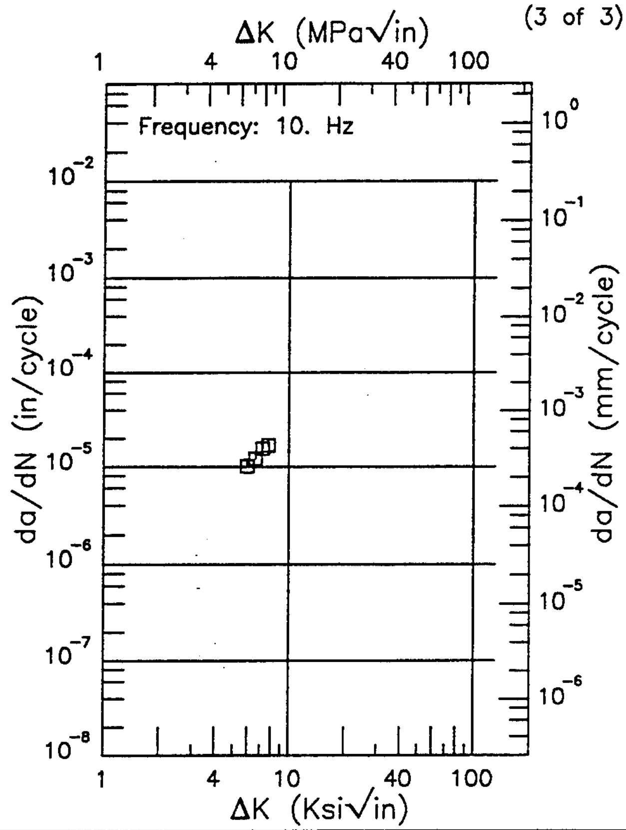
RMS % Error	Life Prediction Ratio Summary
14.07	0. .5 .8 1.25 2.

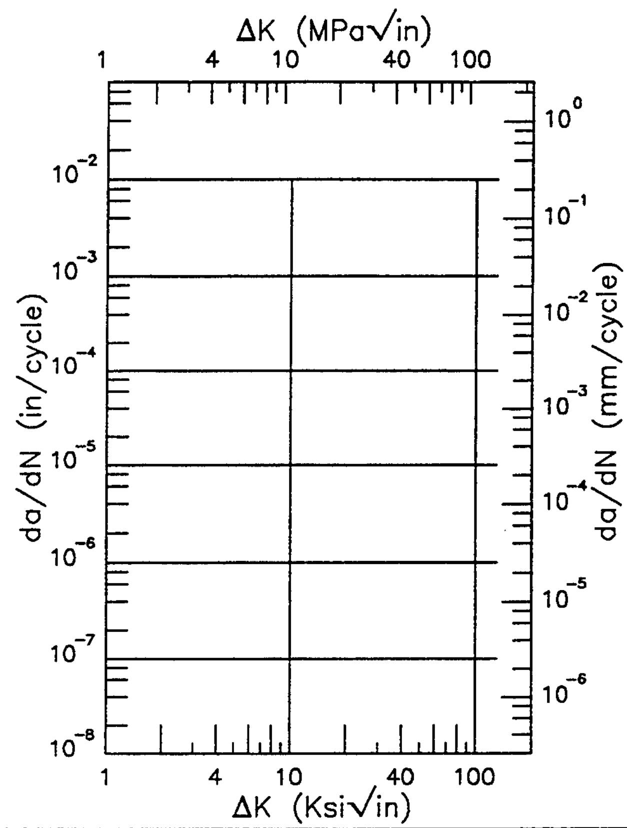
Figure 8.17.3.1.6

Condition/Ht: T6
Form: 0.2 in. Sheet
Specimen Type: CCP (max load specified)
Orientation: L-T
Stress Ratio: 0.5
Environment: LAB AIR; RT

Yield Strength: 85 – 86 ksi
Ult. Strength: 90.2 – 90.5 ksi
Specimen Thk: 0.2 in.
Specimen Width: 11.5 in.
Ref: 86088

(3 of 3)





ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)	ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)

RMS % Error	Life Prediction Ratio Summary	RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.		0. .5 .8 1.25 2.

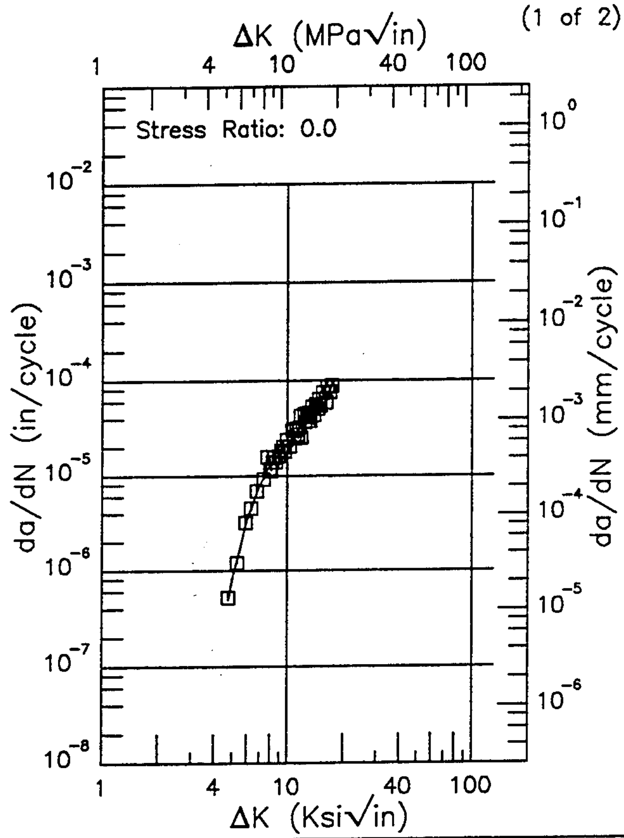
Figure 8.17.3.1.6 (Concluded)

R 7178

Condition/Ht: T6
Form: 0.25 in. Sheet
Specimen Type: CCP (max stress specified)
Orientation: L–T
Frequency: 9 Hz
Environment: H.H.A.; RT

Yield Strength:
Ult. Strength:
Specimen Thk: 0.163 in.
Specimen Width: 5 in.
Ref: BW002

(1 of 2)



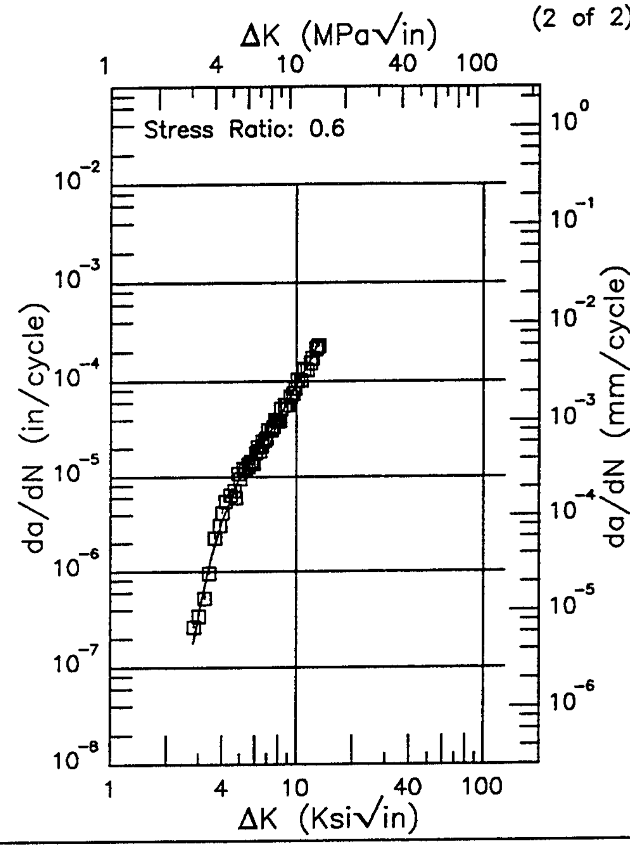
ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
4.76 (min)	0.489
5.	0.790
6.	3.35
7.	7.86
8.	13.0
9.	17.5
10.	21.8
13.	42.7
16.	69.7
17.25 (max)	84.9

RMS % Error 13.07

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

(2 of 2)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
2.81 (min)	0.180
3.	0.359
3.5	1.39
4.	3.43
5.	9.94
6.	17.7
7.	26.6
8.	39.8
9.	61.8
10.	91.3
13.	232.
13.07 (max)	239.

RMS % Error 12.48

Life Prediction Ratio Summary

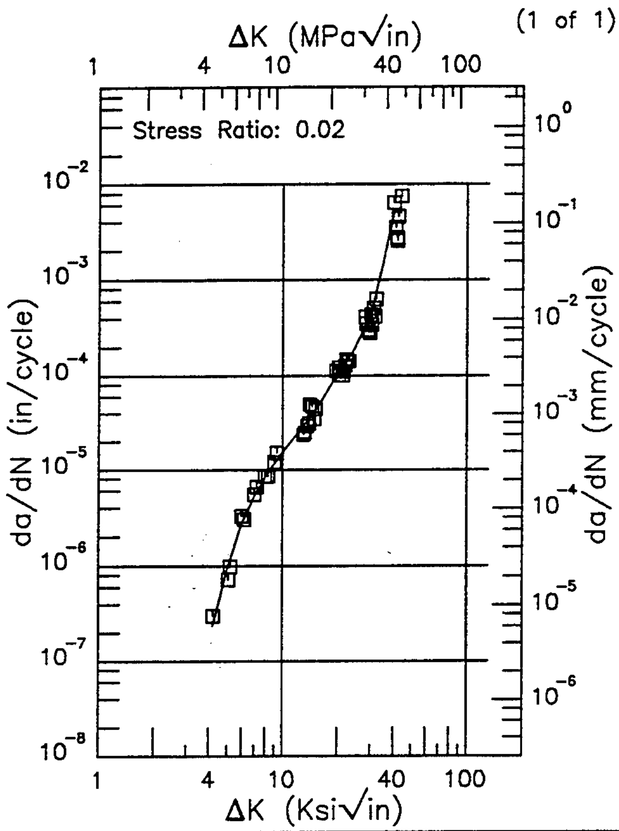
0. .5 .8 1.25 2.

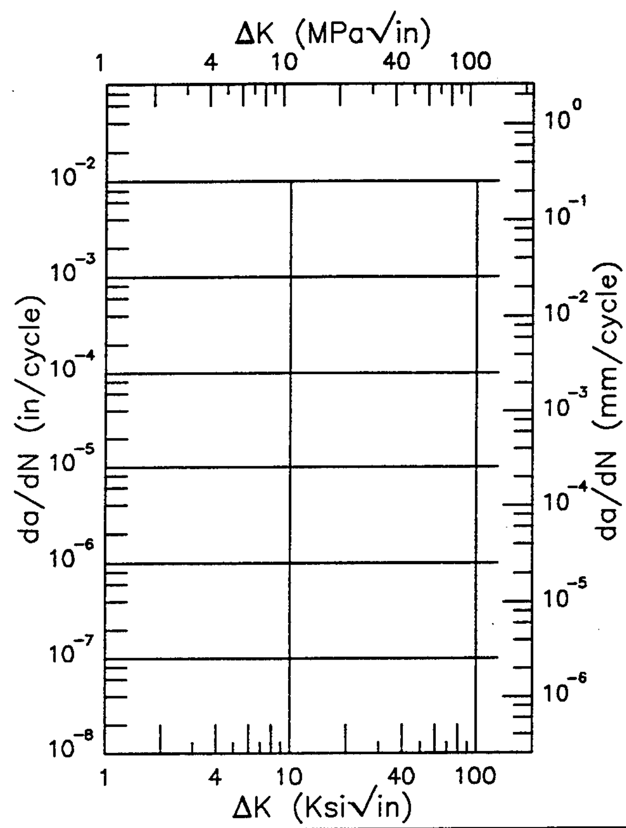
Figure 8.17.3.1.7

Condition/Ht: T651
Form: 0.13 in. Sheet
Specimen Type: CCP (max stress specified)
Orientation: L-T
Frequency: 0.1 – 12 Hz
Environment: LAB AIR; RT

Yield Strength: 82.5 ksi
Ult. Strength: 88.5 ksi
Specimen Thk: 0.063 in.
Specimen Width: 6 in.
Ref: MA011

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
4.20 (min)	0.236
5.	0.924
6.	2.69
7.	5.29
8.	8.38
9.	11.7
10.	15.3
13.	28.7
16.	51.3
20.	105.
25.	209.
30.	430.
35.	1514.
40.	5211.
43.81 (max)	4993.

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error	Life Prediction Ratio Summary
22.20	0. .5 .8 1.25 2.

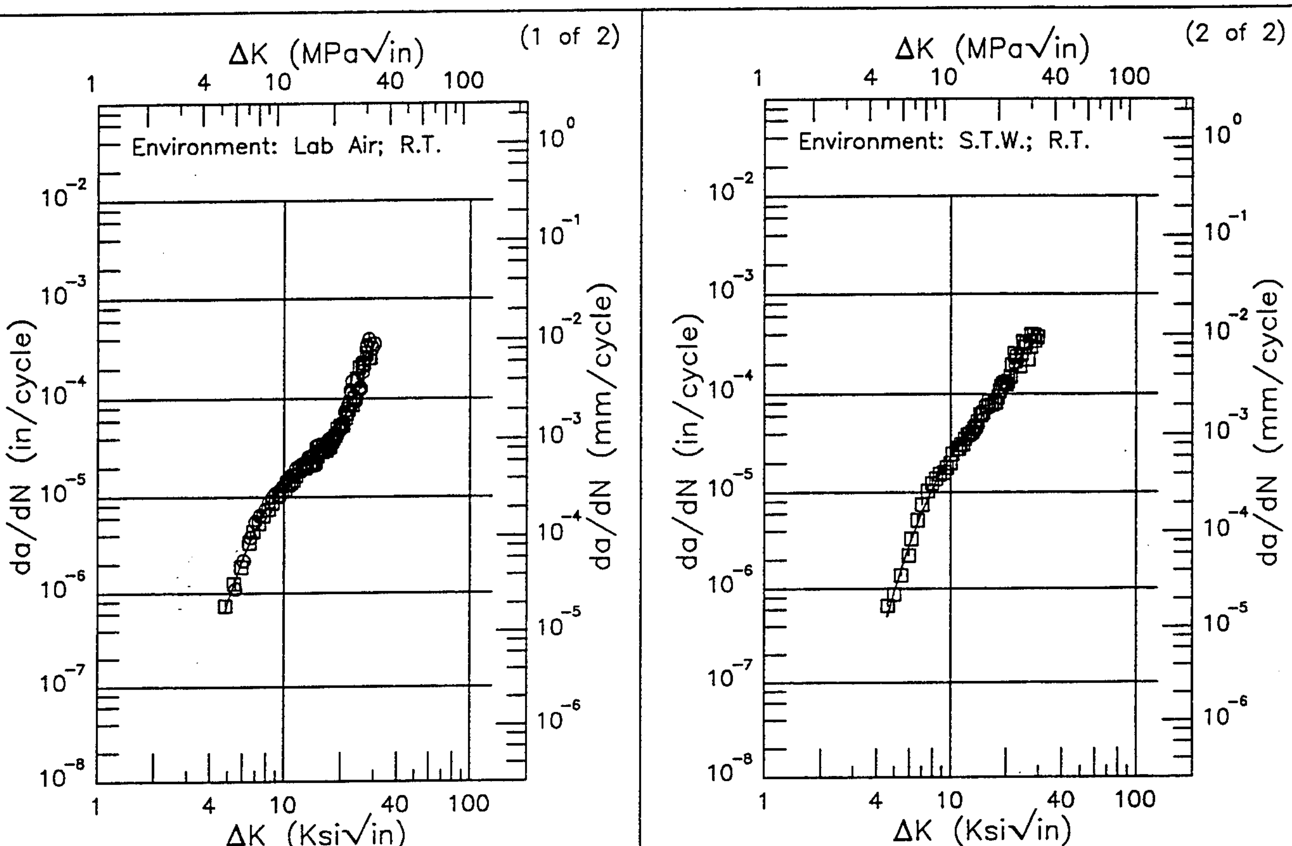
RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

Figure 8.17.3.1.8

E 7178

Condition/Ht: T651
Form: 0.25 in. Plate
Specimen Type: CCP (max stress specified)
Orientation: L-T
Stress Ratio: 0.
Frequency: 20 Hz

Yield Strength: 81.5 ksi
Ult. Strength: 89.7 ksi
Specimen Thk: 0.125 in.
Specimen Width: 8 in.
Ref: RI002



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
4.82 (min)	0.634
5.	0.806
6.	2.25
7.	4.47
8.	7.20
9.	10.2
10.	13.2
13.	21.7
16.	30.5
20.	54.5
25.	159.
30.	362.
30.28 (max)	372.

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
4.58 (min)	0.509
5.	0.944
6.	2.87
7.	6.24
8.	10.9
9.	16.6
10.	22.9
13.	43.1
16.	70.0
20.	140.
25.	272.
29.56 (max)	375.

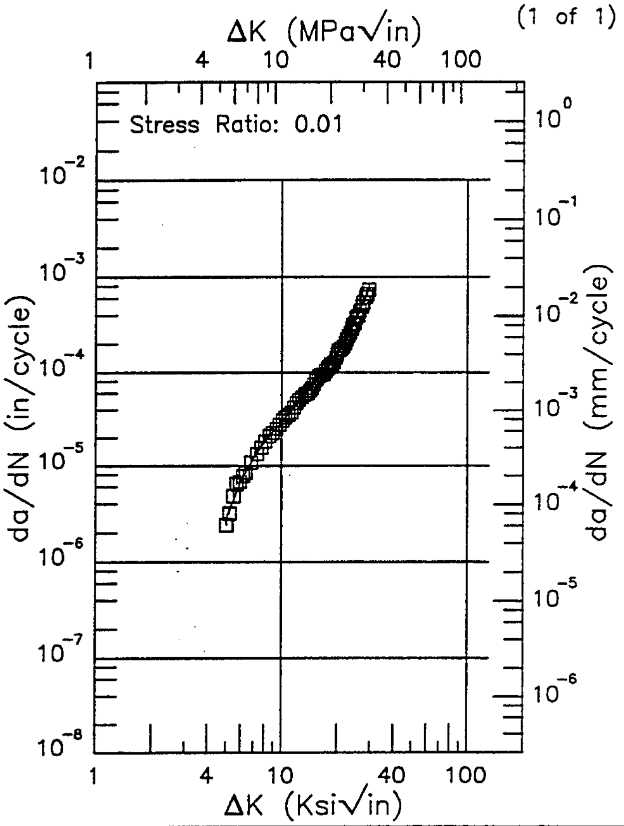
RMS % Error	Life Prediction Ratio Summary	RMS % Error	Life Prediction Ratio Summary
12.84	0. .5 .8 1.25 2.	11.89	0. .5 .8 1.25 2.

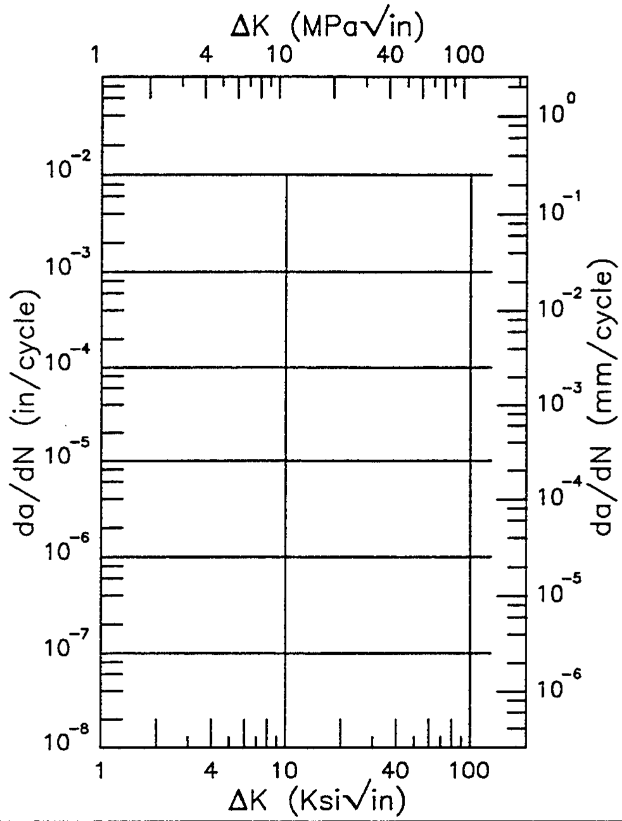
Figure 8.17.3.1.9

Condition/Ht: T651
Form: 0.25 in. Plate
Specimen Type: CCP (max stress specified)
Orientation: L–T
Frequency: 6 Hz
Environment: S.T.W.; RT

Yield Strength: 81.5 ksi
Ult. Strength: 89.7 ksi
Specimen Thk: 0.125 in.
Specimen Width: 8 in.
Ref: RI002

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
5.01 (min)	2.71
6.	6.80
7.	12.0
8.	17.6
9.	23.3
10.	29.3
13.	53.4
16.	89.2
20.	154.
25.	352.
29.40 (max)	710.

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error: 4.95

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

RMS % Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

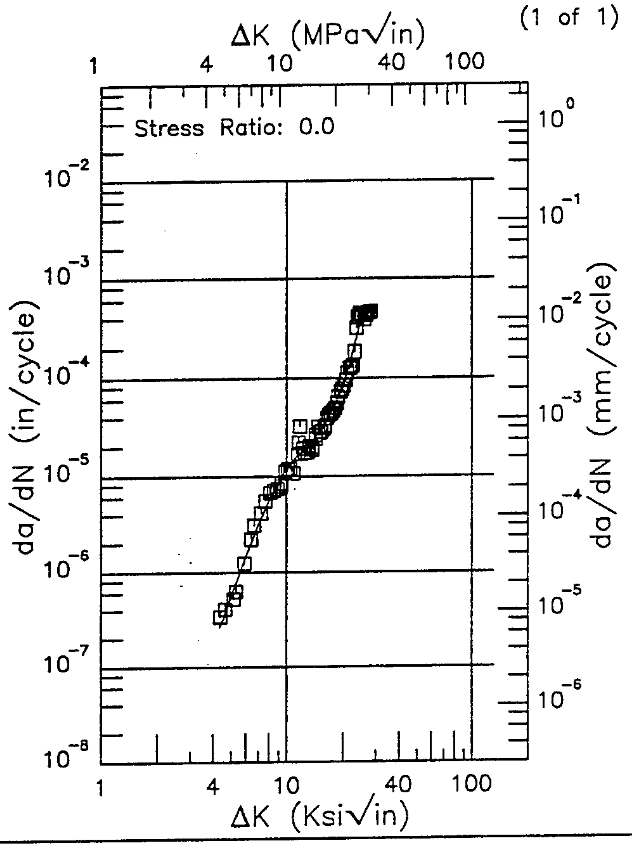
Figure 8.17.3.1.10

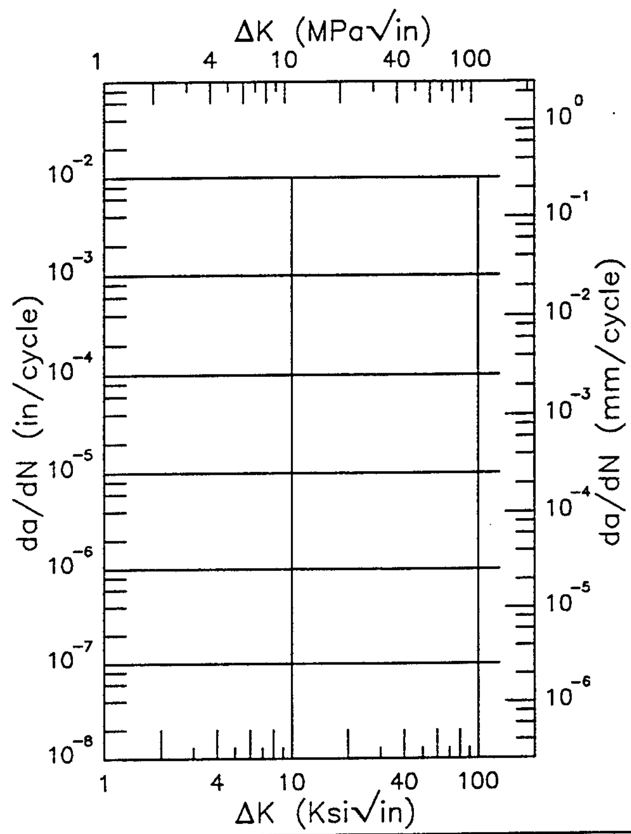
R 7178

Condition/Ht: T651
Form: 0.25 in. Plate
Specimen Type: CCP (max stress specified)
Orientation: T–L
Frequency: 20 Hz
Environment: LAB AIR; RT

Yield Strength: 81.5 ksi
Ult. Strength: 89.7 ksi
Specimen Thk: 0.125 in.
Specimen Width: 8 in.
Ref: RI002

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)
4.35 (min)	0.266
5.	0.558
6.	1.45
7.	3.10
8.	5.58
9.	8.73
10.	12.1
13.	21.0
16.	33.0
20.	82.3
25.	391.
27.90 (max)	412.

ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)

RMS % Error
18.95

Life Prediction Ratio Summary
0. .5 .8 1.25 2.

RMS % Error

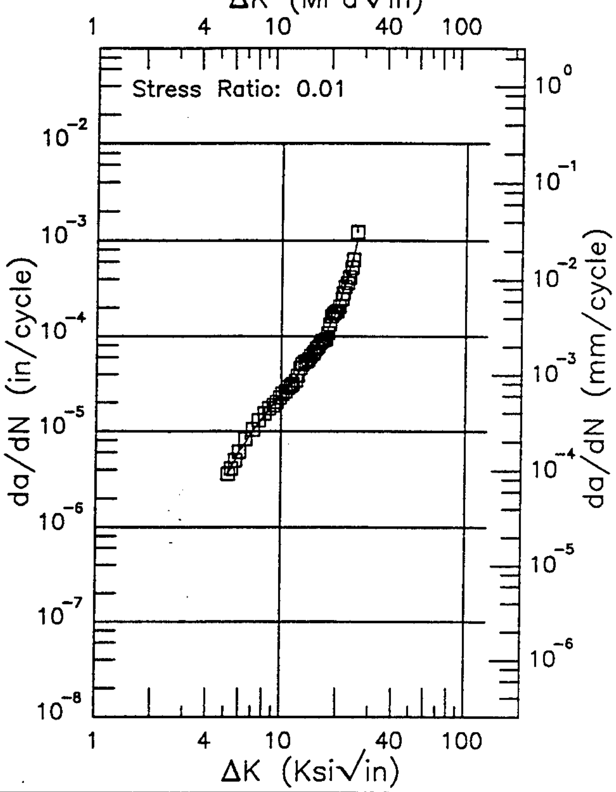
Life Prediction Ratio Summary
0. .5 .8 1.25 2.

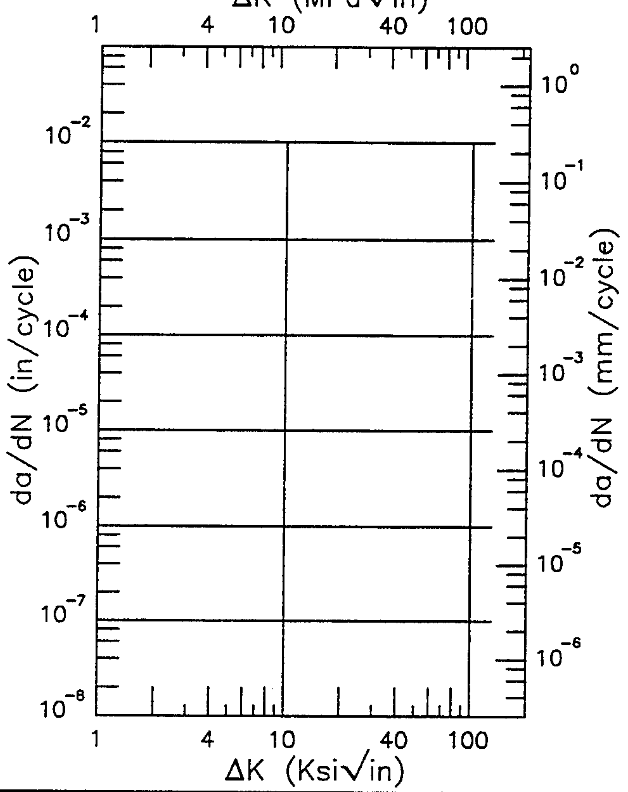
Figure 8.17.3.1.11

Condition/Ht: T651
Form: 0.25 in. Plate
Specimen Type: CCP (max stress specified)
Orientation: T–L
Frequency: 6 Hz
Environment: S.T.W.; RT

Yield Strength: 81.5 ksi
Ult. Strength: 89.7 ksi
Specimen Thk: 0.125 in.
Specimen Width: 8 in.
Ref: RI002

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
5.16 (min)	3.64
6.	6.27
7.	10.0
8.	14.3
9.	19.1
10.	24.6
13.	46.2
16.	82.4
20.	196.
25.	875.
25.29 (max)	968.

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error	Life Prediction Ratio Summary
8.20	0. .5 .8 1.25 2.

RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

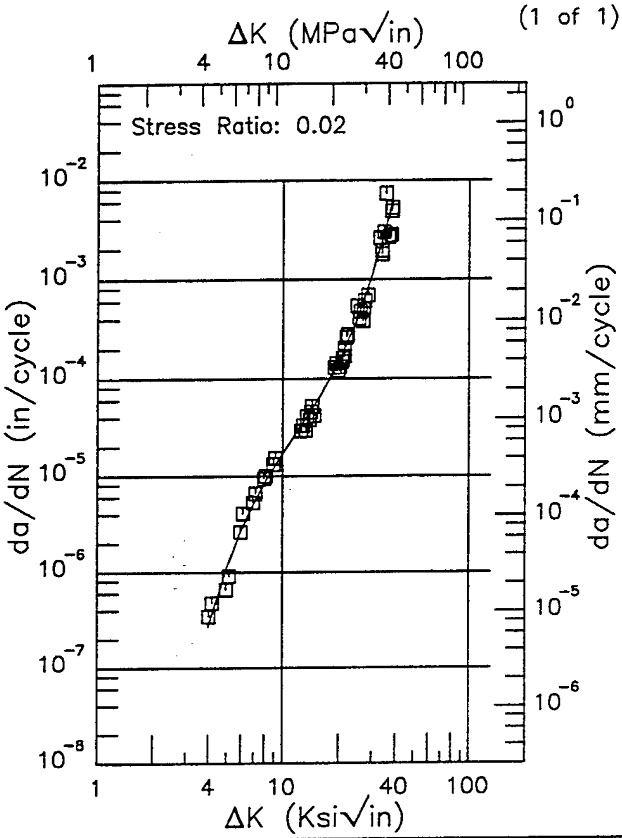
Figure 8.17.3.1.12

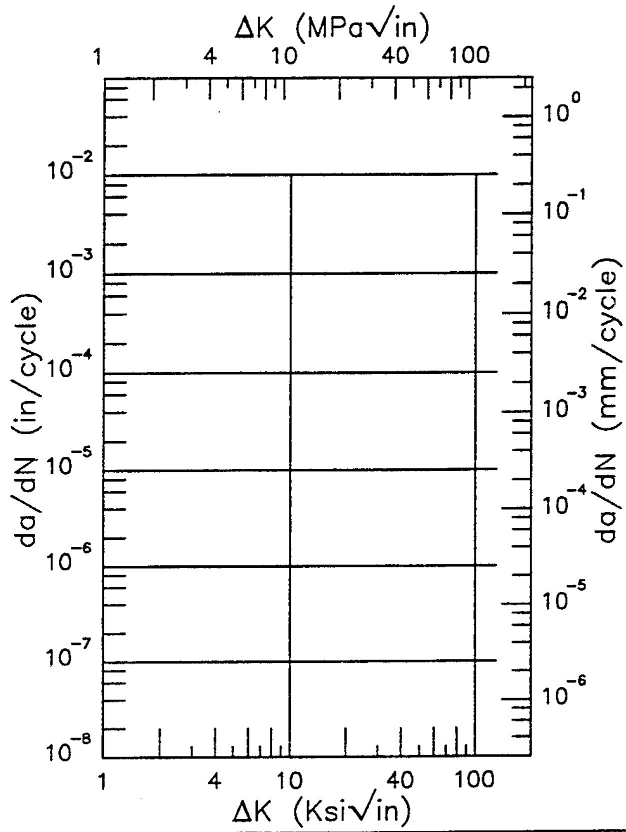
R 7178

Condition/Ht: T651
Form: 0.31 in. Plate
Specimen Type: CCP (max stress specified)
Orientation: L–T
Frequency: 0.1 – 12 Hz
Environment: LAB AIR; RT

Yield Strength: 83.5 ksi
Ult. Strength: 89.5 ksi
Specimen Thk: 0.1 in.
Specimen Width: 6 in.
Ref: MA011

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)
3.99 (min)	0.272
4.	0.276
5.	1.12
6.	2.77
7.	5.26
8.	8.51
9.	12.5
10.	17.2
13.	36.8
16.	69.0
20.	151.
25.	403.
30.	1091.
35.	3014.
38.42 (max)	6094.

ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)

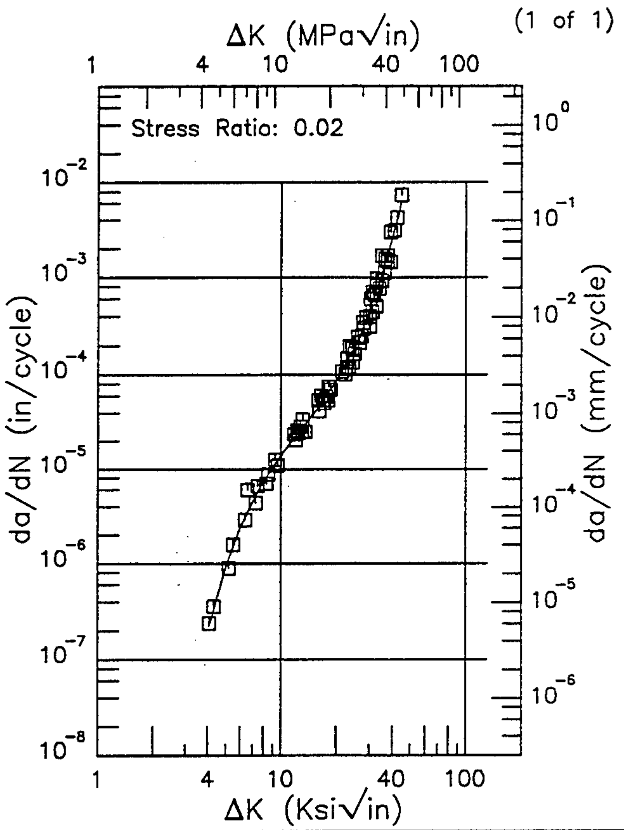
RMS % Error	Life Prediction Ratio Summary
27.20	0. .5 .8 1.25 2.

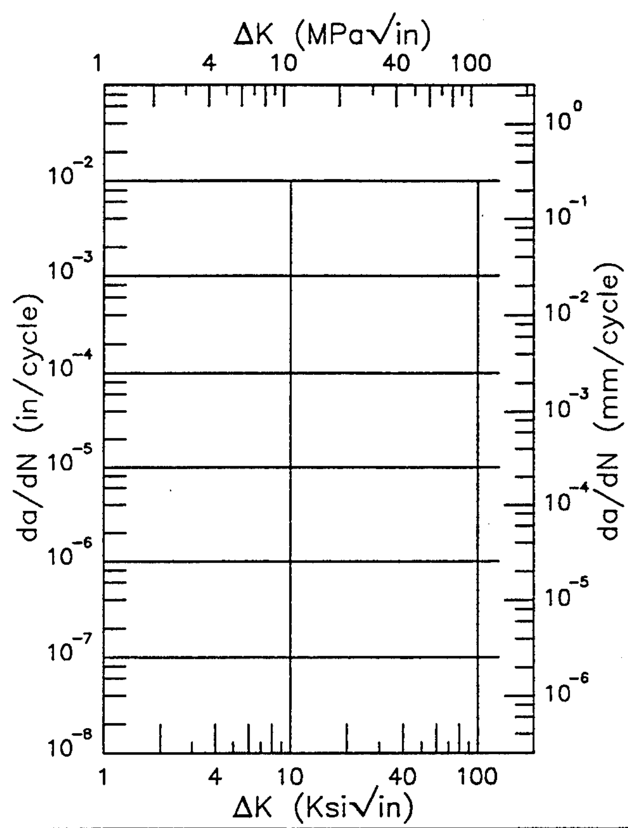
RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

Figure 8.17.3.1.13

Condition/Ht: T651
Form: 0.5 in. Plate
Specimen Type: CCP (max stress specified)
Orientation: L−T
Frequency: 0.1 − 12 Hz
Environment: LAB AIR; RT

Yield Strength: 72 ksi
Ult. Strength: 80.5 ksi
Specimen Thk: 0.185 in.
Specimen Width: 6 in.
Ref: MA011





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
4.05 (min)	0.223
5.	0.909
6.	2.36
7.	4.53
8.	7.29
9.	10.5
10.	14.1
13.	27.2
16.	45.7
20.	86.6
25.	194.
30.	449.
35.	1081.
40.	2673.
44.41 (max)	6045.

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error	Life Prediction Ratio Summary
19.21	0. .5 .8 1.25 2.

RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

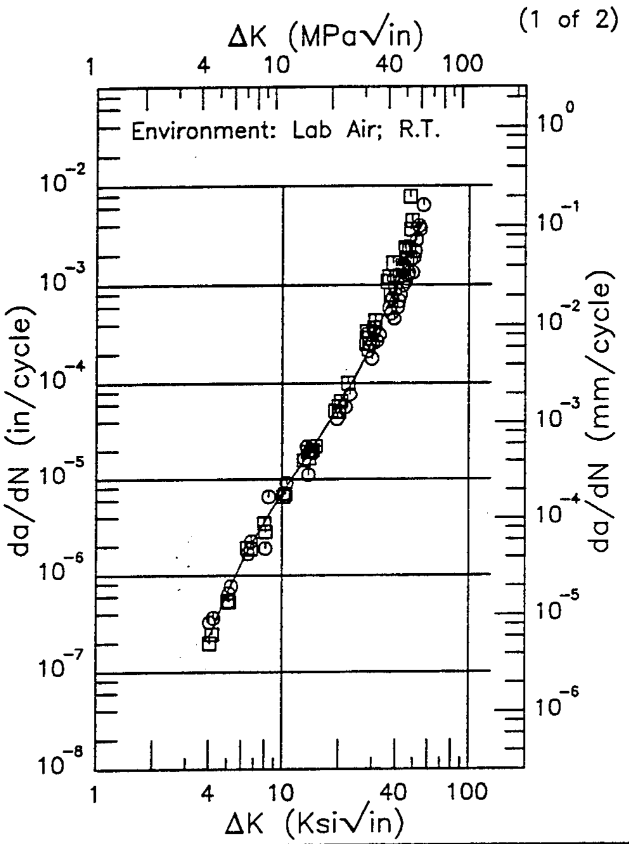
Figure 8.17.3.1.14

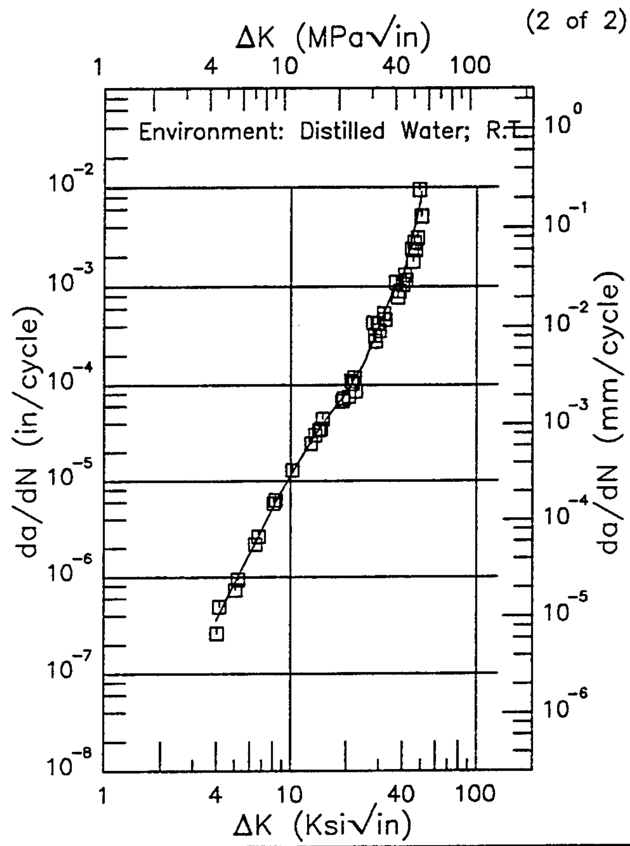
E

7178

Condition/Ht: T76
Form: 0.1 – 0.19 in. Sheet
Specimen Type: CCP (max stress specified)
Orientation: L–T
Stress Ratio: 0.02
Frequency:

Yield Strength: 70.5 – 75 ksi
Ult. Strength: 79 – 81.5 ksi
Specimen Thk: 0.1 in.
Specimen Width:
Ref: MA012





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
4.01 (min)	0.231
5.	0.639
6.	1.33
7.	2.31
8.	3.60
9.	5.22
10.	7.18
13.	15.5
16.	28.8
20.	58.4
25.	129.
30.	268.
35.	533.
40.	991.
50.	2683.
56.27 (max)	4280.

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
4.00 (min)	0.358
5.	0.851
6.	1.73
7.	3.14
8.	5.18
9.	7.95
10.	11.5
13.	26.8
16.	47.5
20.	83.1
25.	169.
30.	396.
35.	830.
40.	1209.
50.	7651.
50.42 (max)	9224.

RMS % Error 40.36

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

RMS % Error 23.15

Life Prediction Ratio Summary

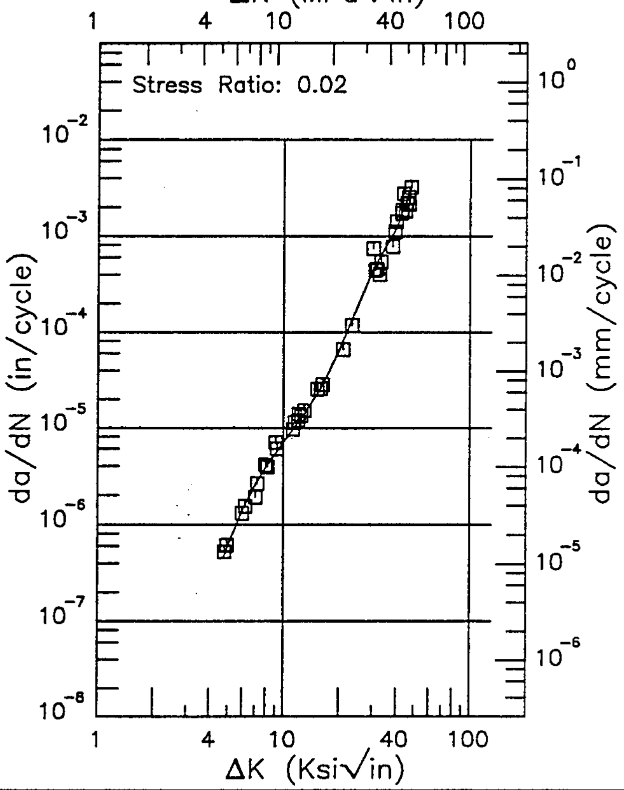
0. .5 .8 1.25 2.

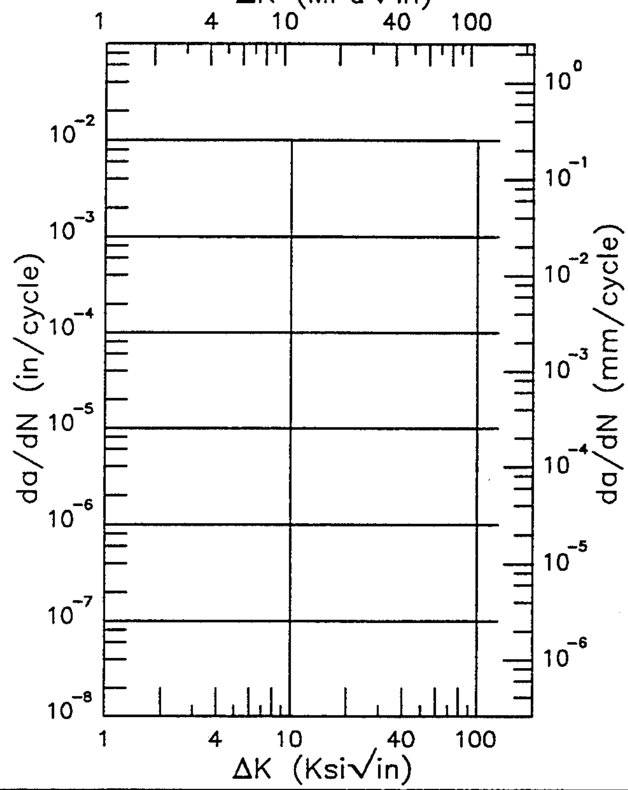
Figure 8.17.3.1.15

Condition/Ht: T76
Form: 0.19 in. Sheet
Specimen Type: CCP (max stress specified)
Orientation: L–T
Frequency:
Environment: LAB AIR; RT

Yield Strength: 70.5 ksi
Ult. Strength: 79 ksi
Specimen Thk: 0.194 in.
Specimen Width:
Ref: MA012

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)
4.78 (min)	0.462
5.	0.591
6.	1.40
7.	2.50
8.	3.83
9.	5.35
10.	7.09
13.	14.2
16.	26.9
20.	64.9
25.	190.
30.	441.
35.	776.
40.	1197.
47.92 (max)	3308.

ΔK (Ksi√in) da/dN (10^{-6} in/cycle)

RMS % Error	Life Prediction Ratio Summary
18.70	0. .5 .8 1.25 2.

RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

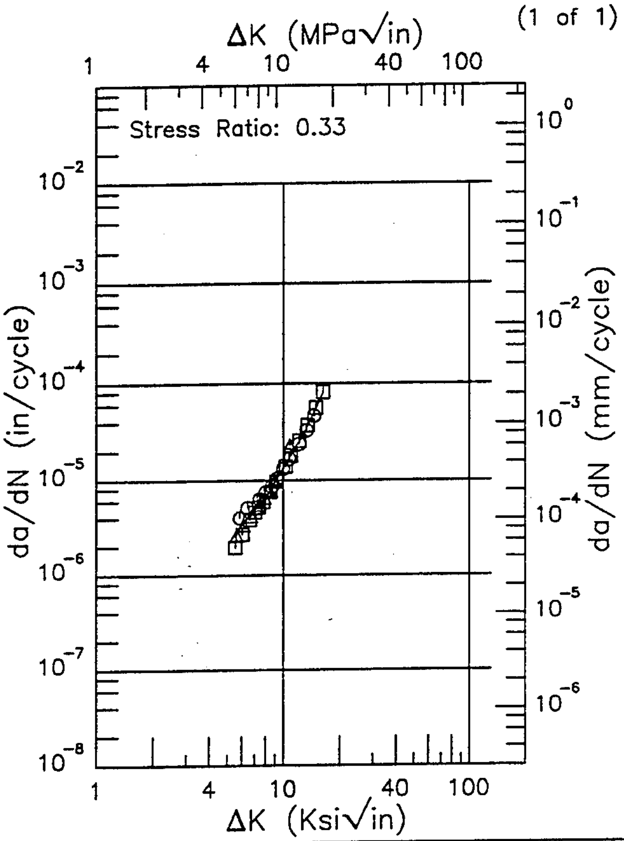
Figure 8.17.3.1.16

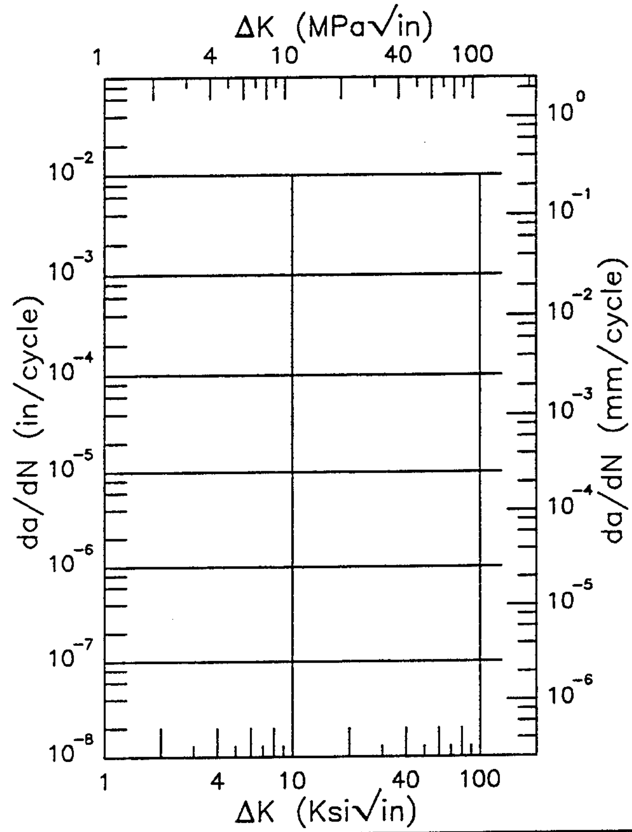
R 7178

Condition/Ht: T7651
Form: 1.38 in. Plate
Specimen Type: CCP (max load specified)
Orientation: L–T
Frequency: 5.2 Hz
Environment: LAB AIR; RT

Yield Strength: 72.6 ksi
Ult. Strength: 81.3 ksi
Specimen Thk: 0.748 in.
Specimen Width: 3 in.
Ref: 86213

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)
5.52 (min)	2.59
6.	3.39
7.	4.90
8.	6.65
9.	9.49
10.	13.7
13.	31.5
16.	76.8
16.23 (max)	81.1

ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)

RMS % Error
11.92

Life Prediction Ratio Summary
□△ ○
0. .5 .8 1.25 2.

RMS % Error

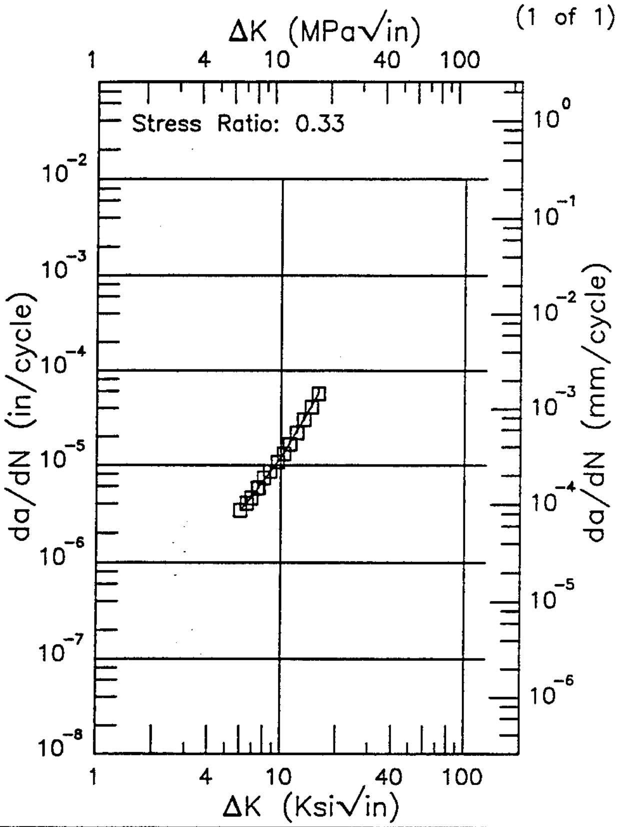
Life Prediction Ratio Summary
0. .5 .8 1.25 2.

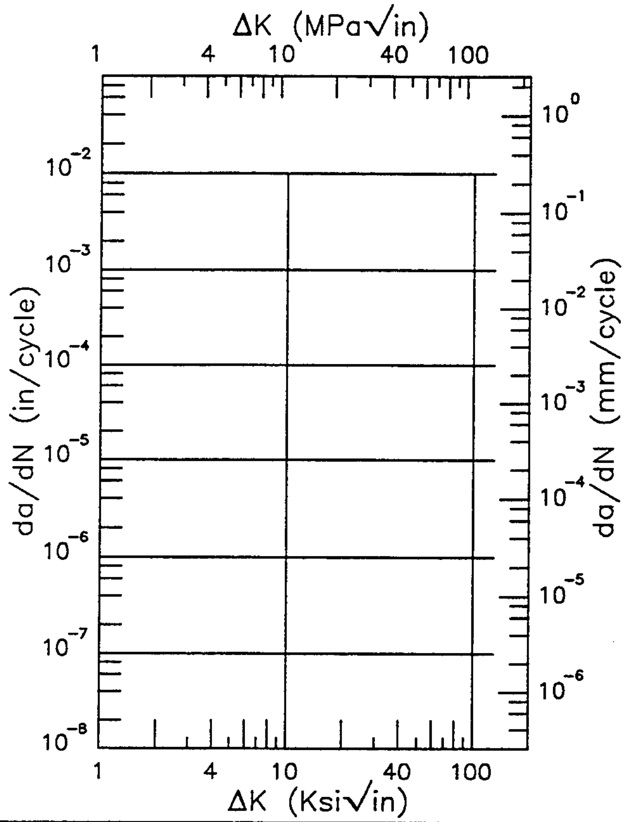
Figure 8.17.3.1.17

Condition/Ht: T7651
Form: 0.44 in. Plate
Specimen Type: CCP (max load specified)
Orientation: L-T
Frequency: 5.2 Hz
Environment: LAB AIR; RT

Yield Strength: 70.9 ksi
Ult. Strength: 80 ksi
Specimen Thk: 0.444 in.
Specimen Width: 3 in.
Ref: 86213

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
5.99 (min)	3.39
6.	3.40
7.	4.80
8.	6.94
9.	9.32
10.	11.9
13.	28.5
15.78 (max)	56.0

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error	Life Prediction Ratio Summary
2.21	0. .5 .8 1.25 2.

RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

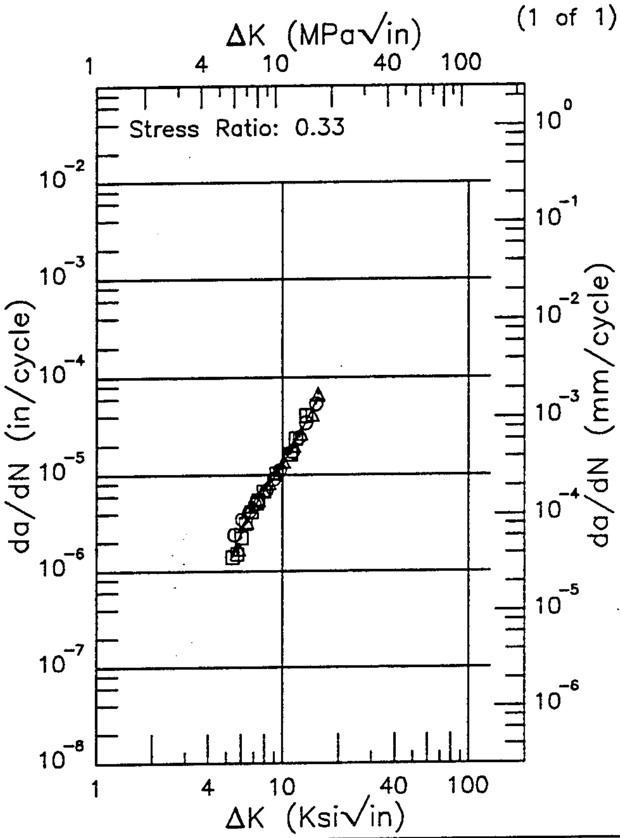
Figure 8.17.3.1.18

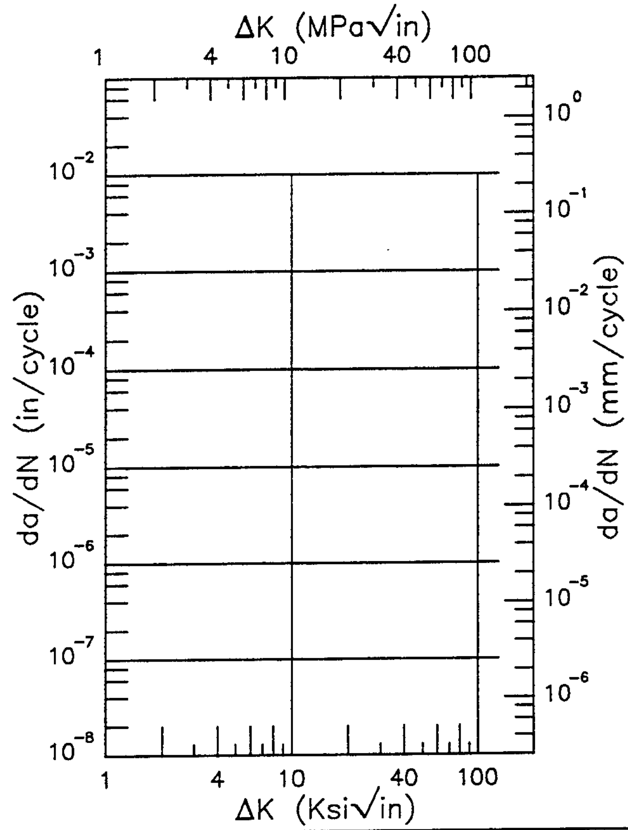
R 7178

Condition/Ht: T7651
Form: 0.48 – 0.49 in. Plate
Specimen Type: CCP (max load specified)
Orientation: L–T
Frequency: 5.2 Hz
Environment: LAB AIR; RT

Yield Strength: 69.2 – 70.9 ksi
Ult. Strength: 80 ksi
Specimen Thk: 0.481 – 0.486 in.
Specimen Width: 2.999 – 3 in.
Ref: 86213

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)
5.37 (min)	1.53
6.	2.50
7.	4.57
8.	6.96
9.	9.40
10.	12.5
13.	31.8
15.40 (max)	60.9

ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)

RMS % Error	Life Prediction Ratio Summary
12.28	0. .5 .8 1.25 2.

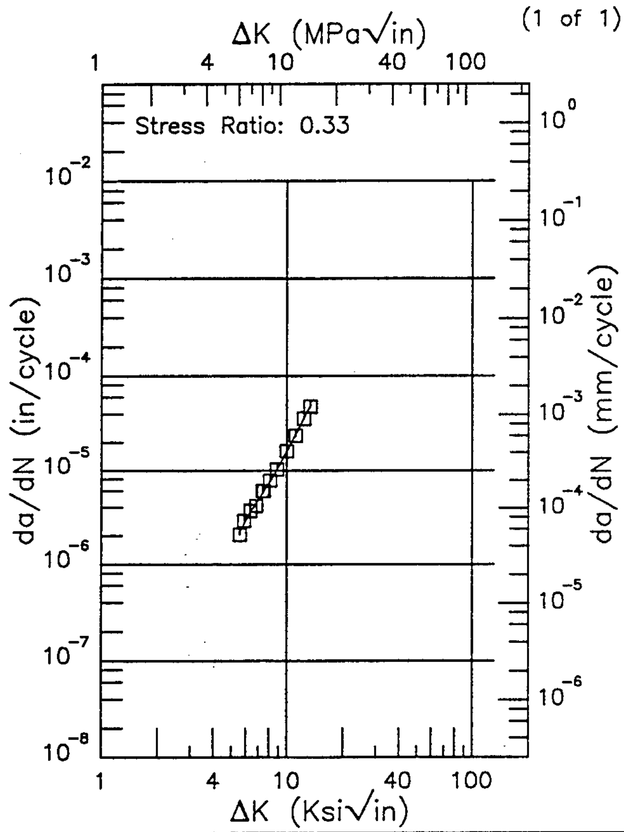
RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

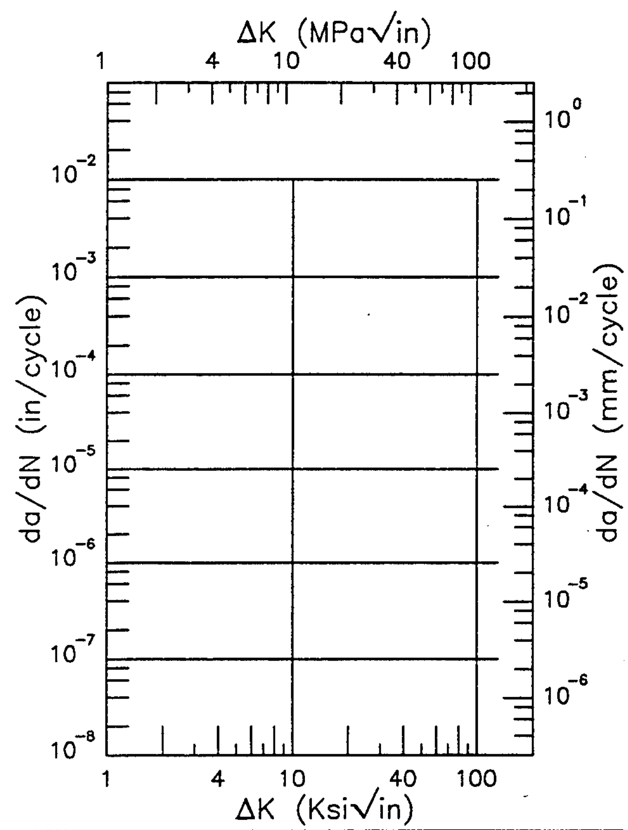
Figure 8.17.3.1.19

Condition/Ht: T7651
Form: 1.38 in. Plate
Specimen Type: CCP (max load specified)
Orientation: T–L
Frequency: 5.2 Hz
Environment: LAB AIR; RT

Yield Strength: 71.1 ksi
Ult. Strength: 80.5 ksi
Specimen Thk: 0.751 in.
Specimen Width: 3 in.
Ref: 86213

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
5.54 (min)	2.11
6.	2.94
7.	4.81
8.	7.29
9.	11.0
10.	16.2
13.	43.5
13.28 (max)	47.2

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error	Life Prediction Ratio Summary	RMS % Error	Life Prediction Ratio Summary
3.40	0. .5 .8 1.25 2.		0. .5 .8 1.25 2.

Figure 8.17.3.1.20

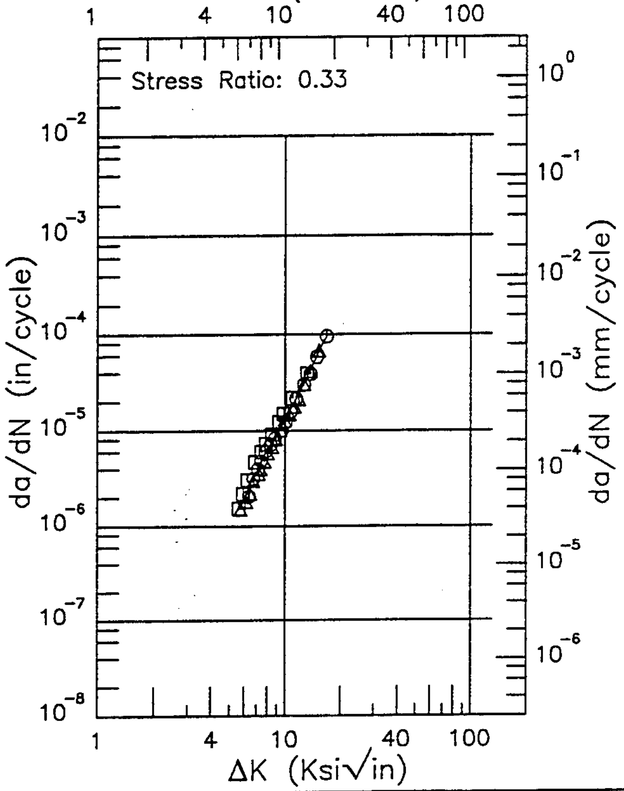
R

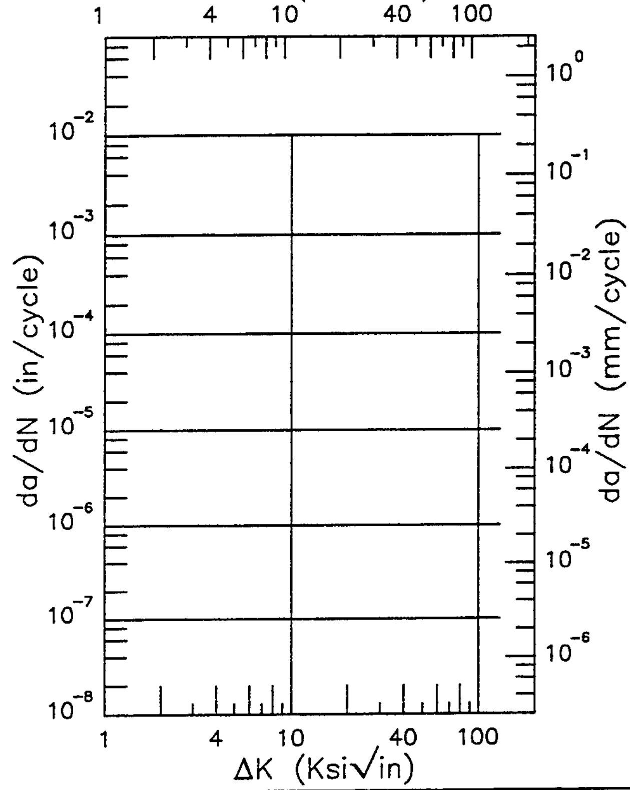
7178

Condition/Ht: T7651
Form: 0.49 in. Plate
Specimen Type: CCP (max load specified)
Orientation: T–L
Frequency: 5.2 Hz
Environment: LAB AIR; RT

Yield Strength: 69.2 ksi
Ult. Strength: 79.1 ksi
Specimen Thk: 0.485 in.
Specimen Width: 3 in.
Ref: 86213

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
5.59 (min)	1.46
6.	1.97
7.	3.72
8.	6.22
9.	9.38
10.	13.2
13.	34.0
16.	81.8
16.70 (max)	94.5

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

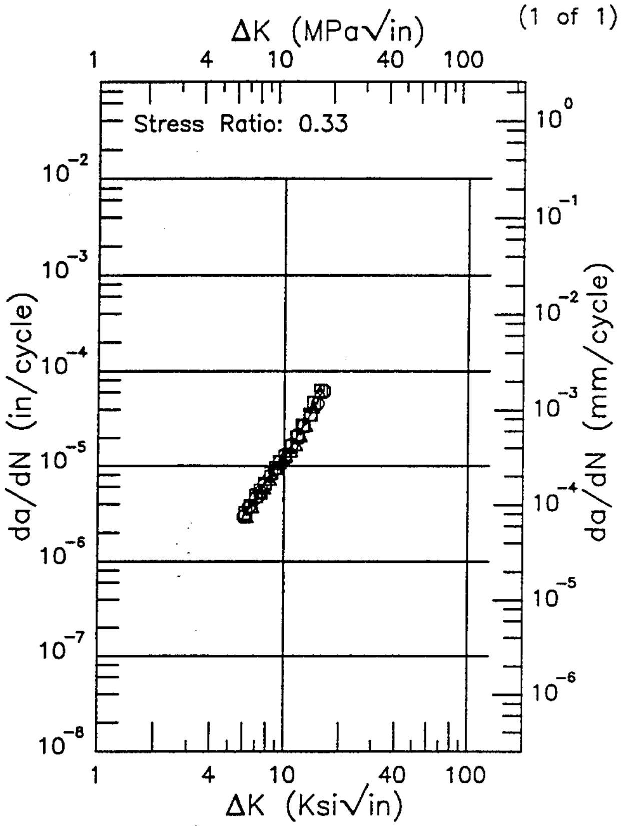
RMS % Error	Life Prediction Ratio Summary
13.63	0. .5 .8 1.25 2.

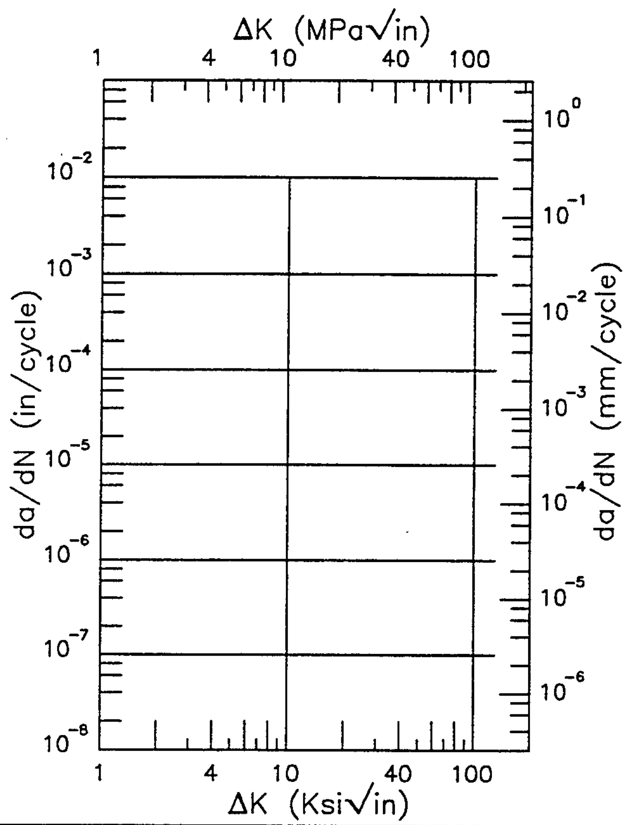
RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

Figure 8.17.3.1.21

Condition/Ht: T76510
Form: 0.69 in. Extrusion
Specimen Type: CCP (max load specified)
Orientation: L-T
Frequency: 5.2 Hz
Environment: LAB AIR; RT

Yield Strength: 65.3 ksi
Ult. Strength: 76 ksi
Specimen Thk: 0.657 – 0.659 in.
Specimen Width: 3.004 – 3.006 in.
Ref: 86213





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
6.03 (min)	2.95
7.	4.46
8.	6.77
9.	9.56
10.	12.6
13.	27.7
16.	61.4
16.32 (max)	62.9

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error	Life Prediction Ratio Summary
5.17	0. .5 .8 1.25 2.

RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

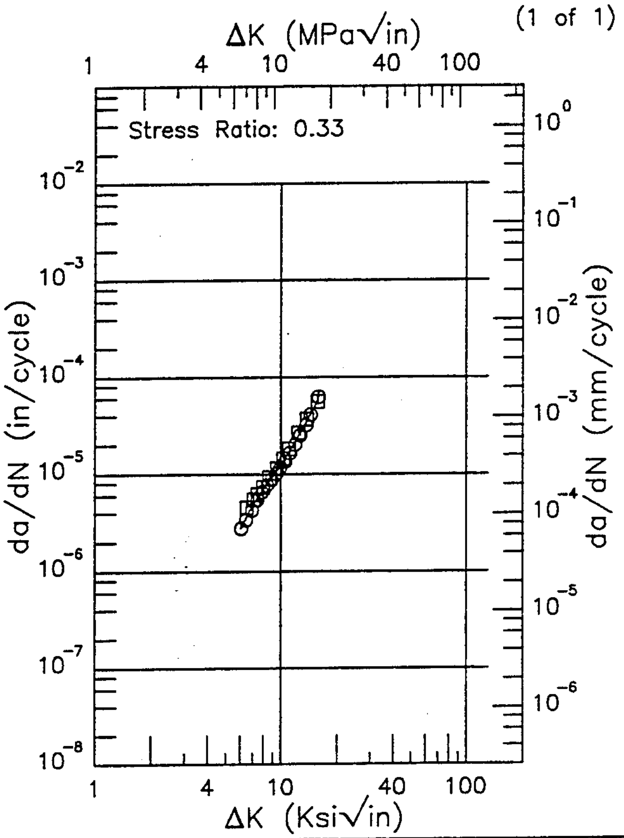
Figure 8.17.3.1.22

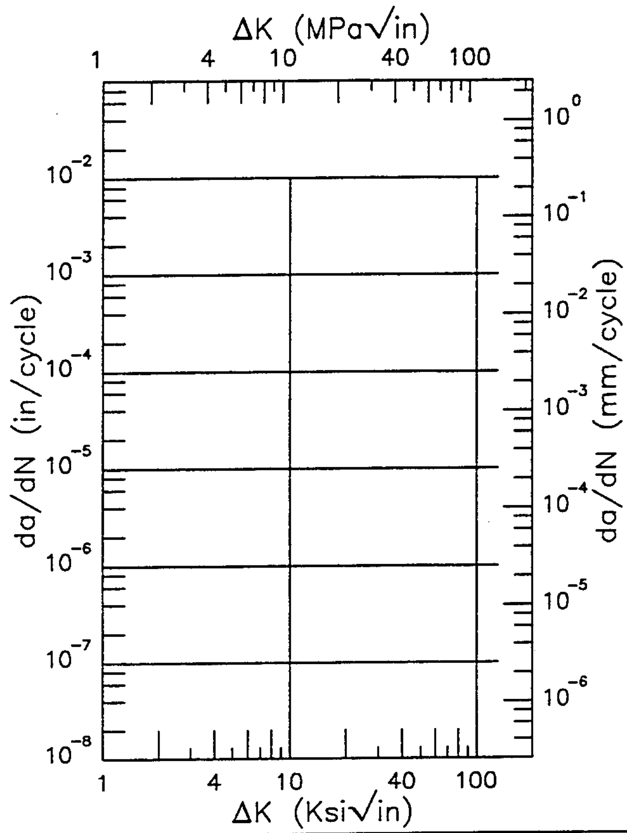
R — 7178

Condition/Ht: T76510
Form: 0.69 in. Extrusion
Specimen Type: CCP (max load specified)
Orientation: L–T
Frequency: 5.2 Hz
Environment: LAB AIR; RT

Yield Strength: 65.3 ksi
Ult. Strength: 76 ksi
Specimen Thk: 0.628 in.
Specimen Width: 3 – 3.006 in.
Ref: 86213

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)
6.04 (min)	2.81
7.	4.87
8.	7.00
9.	9.31
10.	12.3
13.	28.4
15.78 (max)	57.7

ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)

RMS % Error
7.16

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

RMS % Error

Life Prediction Ratio Summary

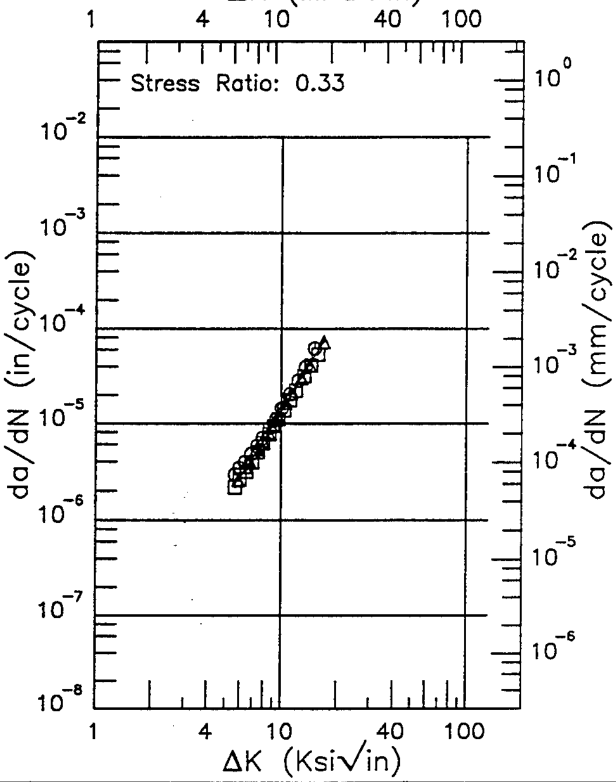
0. .5 .8 1.25 2.

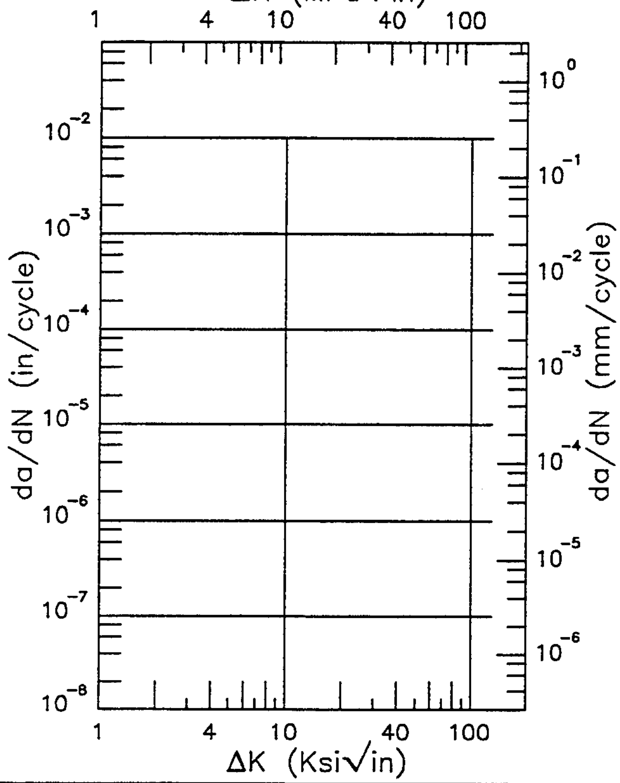
Figure 8.17.3.1.23

Condition/Ht: T76510
Form: 3.5 in. Extruded Bar
Specimen Type: CCP (max load specified)
Orientation: L-T
Frequency: 5.2 Hz
Environment: LAB AIR; RT

Yield Strength: 63.4 ksi
Ult. Strength: 73.6 ksi
Specimen Thk: 0.75 – 0.752 in.
Specimen Width: 2.998 – 3.004 in.
Ref: 86213

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
5.65 (min)	2.36
6.	2.77
7.	4.32
8.	6.53
9.	9.53
10.	13.5
13.	32.0
16.	62.1
16.84 (max)	72.7

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error	Life Prediction Ratio Summary
9.47	0. .5 .8 1.25 2.

RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

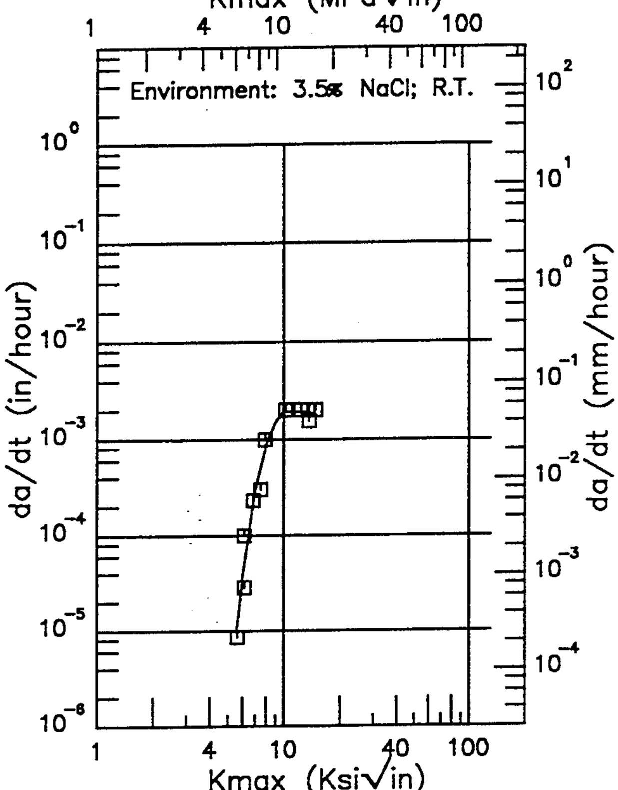
Figure 8.17.3.1.24

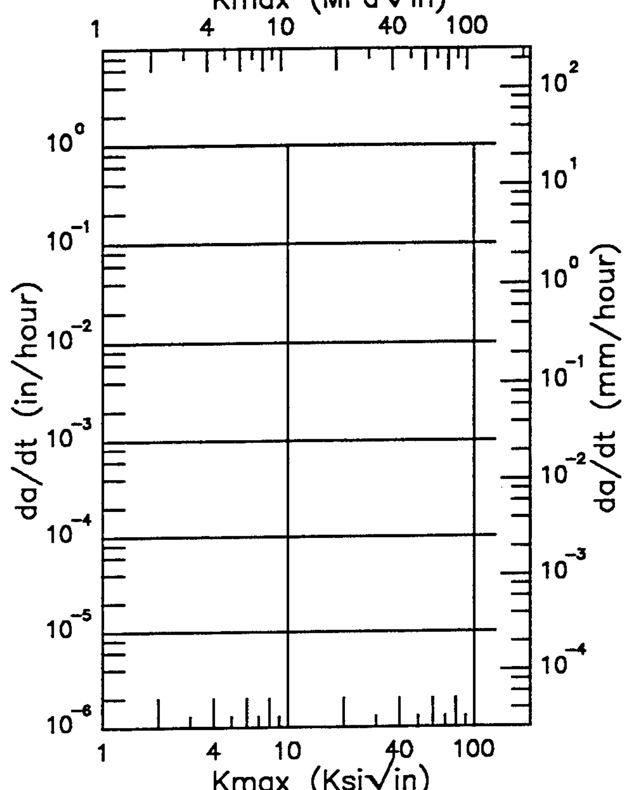
7178

Condition/Ht: T651
Form: 1 in. Plate
Specimen Type: DCB
Orientation: T–L
Yield Strength:
Ult. Strength:

Specimen Thk:
Specimen Width:
Ao:
KIscc:
Ref: 85543

(1 of 1)





Kmax (Ksi√in)	da/dt (10^{-3}in/hour)
5.60 (min)	0.0103
6.	0.0367
7.	0.294
8.	0.883
9.	1.52
10.	1.92
13.	1.93
14.70 (max)	1.82

Kmax (Ksi√in)	da/dt (10^{-3}in/hour)

RMS % Error
40.82

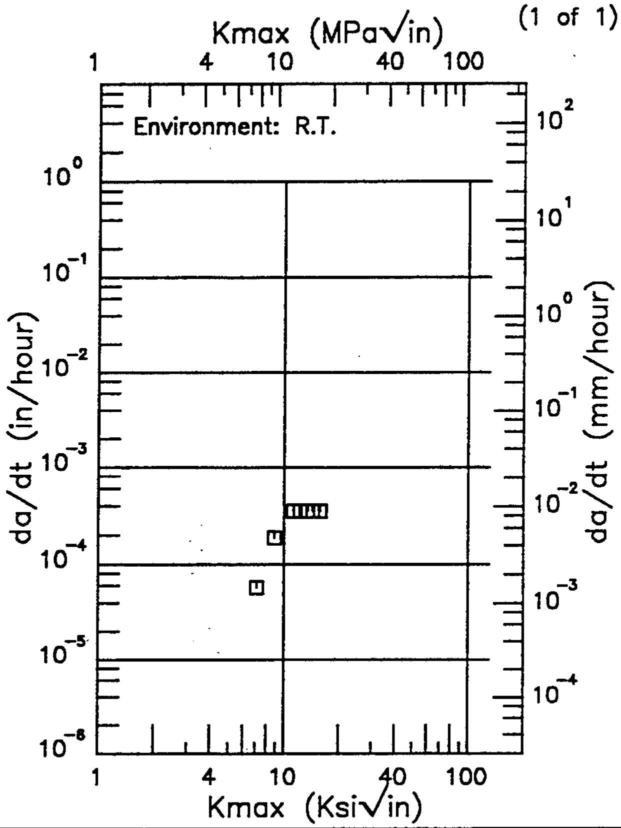
RMS % Error

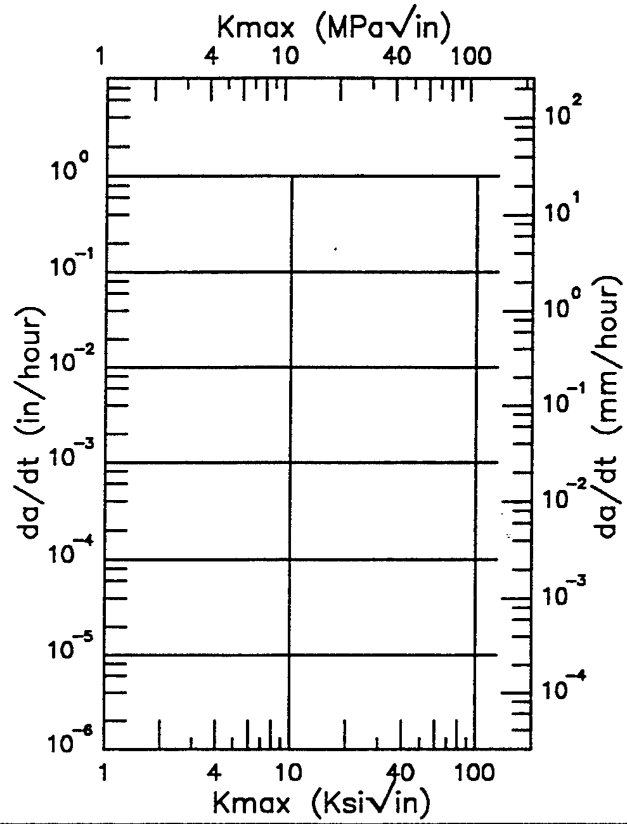
Figure 8.17.3.2.1

Condition/Ht: T651+ 1HR AT 320F
Form: 1 in. Plate
Specimen Type: DCB
Orientation: T–L
Yield Strength:
Ult. Strength:

Specimen Thk:
Specimen Width:
A_o:
K_{Iscc}:
Ref: 85543

(1 of 1)





Kmax (Ksi√in)	da/dt (10^{-3}in/hour)	Kmax (Ksi√in)	da/dt (10^{-3}in/hour)

RMS % Error		RMS % Error	

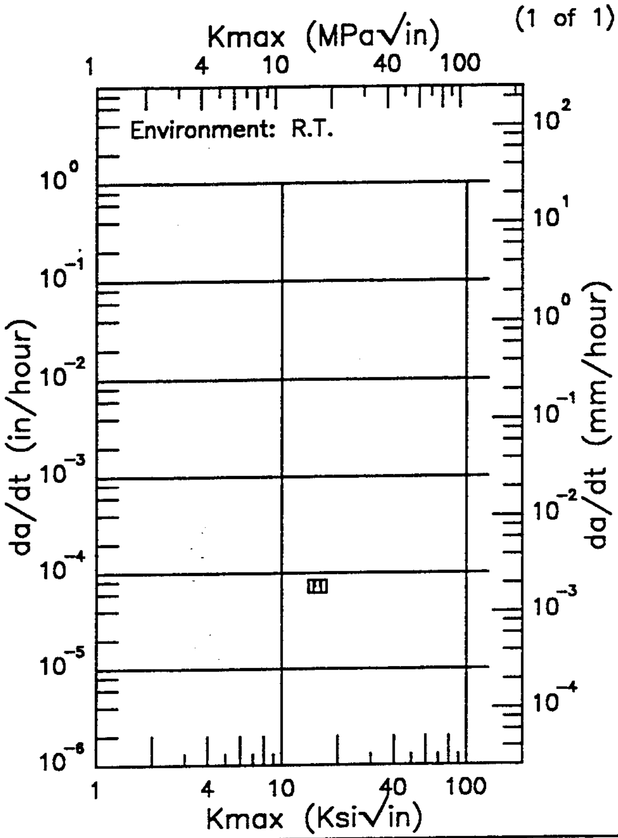
Figure 8.17.3.2.2

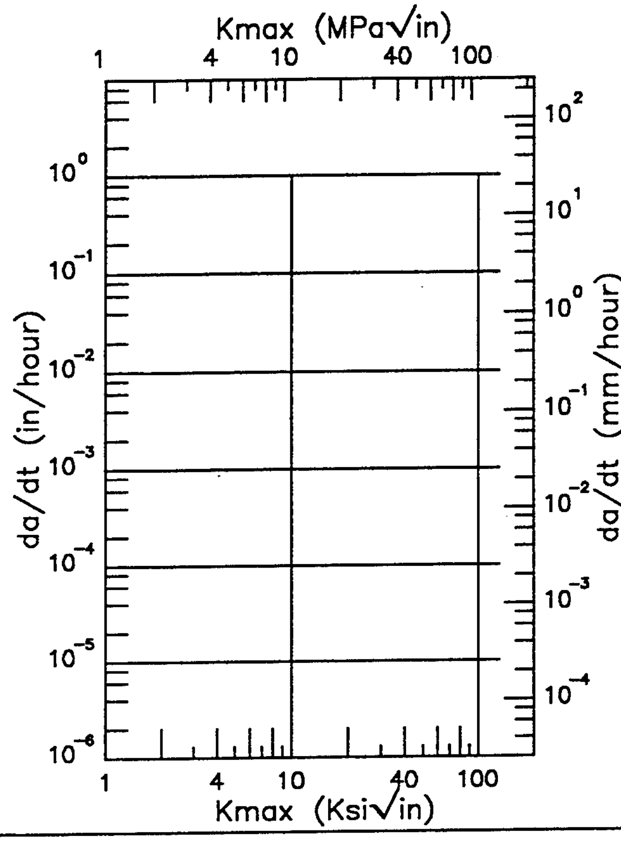
7178

Condition/Ht: T651+ 8HR AT 320F
Form: 1 in. Plate
Specimen Type: DCB
Orientation: T–L
Yield Strength:
Ult. Strength:

Specimen Thk:
Specimen Width:
A_o:
K_{Iscc}:
Ref: 85543

(1 of 1)





Kmax (Ksi√in)	da/dt (10^{-3}in/hour)	Kmax (Ksi√in)	da/dt (10^{-3}in/hour)

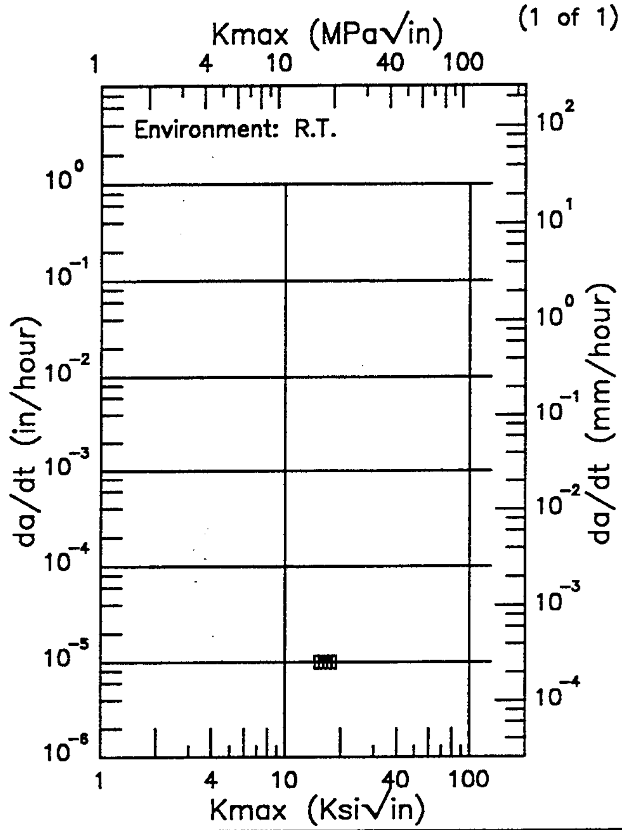
RMS % Error		RMS % Error	

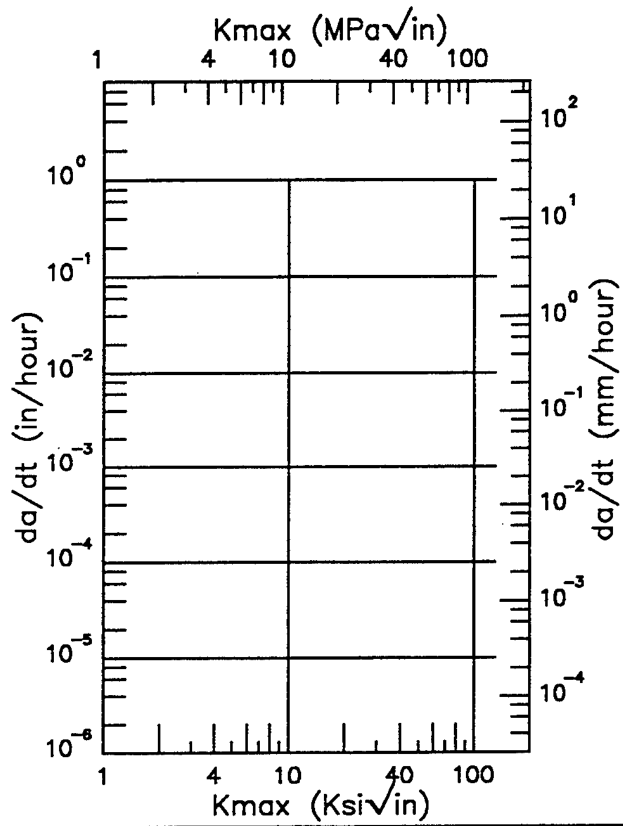
Figure 8.17.3.2.3

Condition/Ht: T651+ 12HR AT 320F
Form: 1 in. Plate
Specimen Type: DCB
Orientation: T–L
Yield Strength:
Ult. Strength:

Specimen Thk:
Specimen Width:
A_o:
K_{Iscc}:
Ref: 85543

(1 of 1)





Kmax (Ksi√in)	da/dt (10^{-3}in/hour)	Kmax (Ksi√in)	da/dt (10^{-3}in/hour)

RMS % Error		RMS % Error	

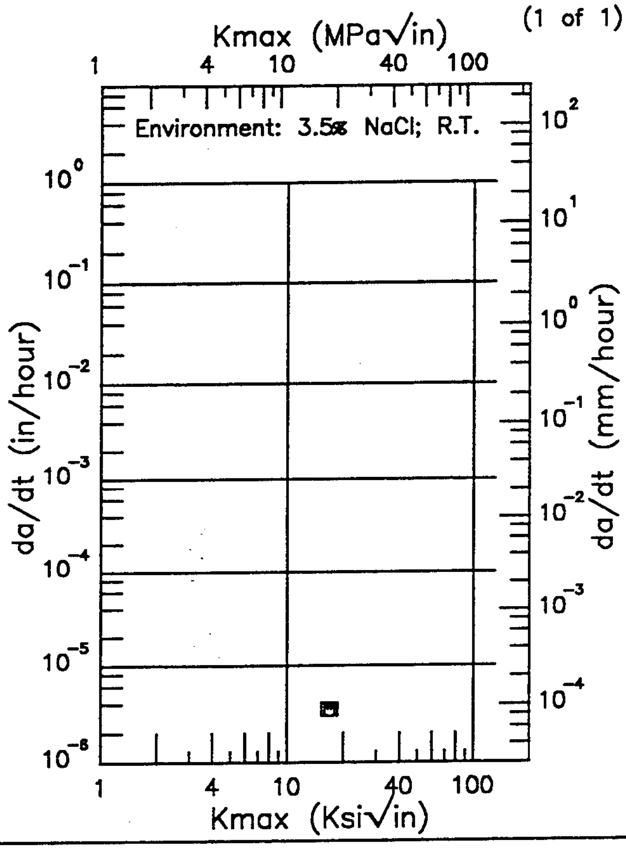
Figure 8.17.3.2.4

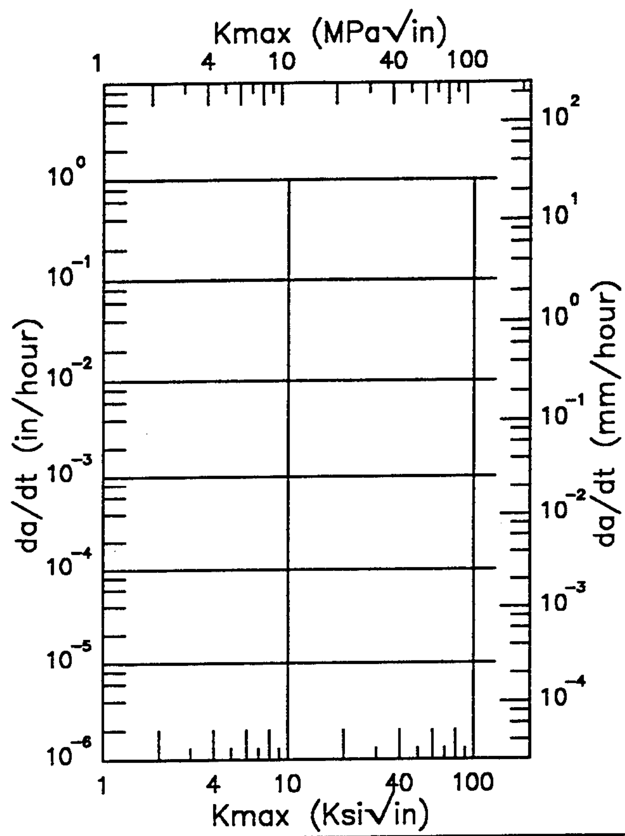
7178

Condition/Ht: T7651
Form: 1 in. Plate
Specimen Type: DCB
Orientation: T–L
Yield Strength:
Ult. Strength:

Specimen Thk:
Specimen Width:
Ao:
KIscc:
Ref: 85543

(1 of 1)





Kmax (Ksi√in)	da/dt (10^{-3}in/hour)

Kmax (Ksi√in)	da/dt (10^{-3}in/hour)

RMS % Error	

RMS % Error	

Figure 8.17.3.2.5

TABLE 8.18.2.2

ALUMINUM 7178 (ALCLAD) K_C

CONDITION HEAT TREAT	PRODUCT FORM	PRODUCT THICK (in.)	TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN WIDTH (in.) W	SPECIMEN THICK (in.) B	CRACK LENGTH INIT (in.) $2a_o$	CRACK LENGTH FINAL (in.) $2a_f$	GROSS STRESS ONSET (Ksi) σ_o	GROSS STRESS MAX (Ksi) σ_{Max}	K_{app} (Ksi$\sqrt{in}$)	K_{app} MEAN	K_{app} STAN DEV	K_c (Ksi$\sqrt{in}$)	K_c MEAN	K_c STAN DEV	DATE	REFER
BUCKLING OF CRACK EDGES NOT RESTRAINED																			
T6	Sheet	0.06	R.T.	L-T	82.2	3.000	0.063	1.260	1.883	---	24.80	39.25	39.0	1.5	57.36*	---	---	1973	86213
		0.06			82.2	3.000	0.063	1.200	1.828	---	26.40	40.30			58.95*			1973	86213
		0.06			82.2	3.000	0.063	1.100	1.762	---	26.00	37.32			55.67			1973	86213
T6	Sheet	0.12	R.T.	L-T	81.8	3.000	0.123	1.160	2.102	---	29.10	43.35	41.6	2.5	78.56*	---	---	1973	86213
		0.12			81.8	3.000	0.124	1.200	2.066	---	26.10	39.84			68.60*			1973	86213
T6	Sheet	0.02	R.T.	T-L	78.6	3.000	0.021	1.120	1.879	---	29.10	42.29	42.2	0.1	67.13*	---	---	1973	86213
		0.02			78.6	3.000	0.021	1.140	2.016	---	28.60	42.08			72.50*			1973	86213
T6	Sheet	0.06	R.T.	T-L	79.4	3.000	0.063	1.170	1.768	---	23.90	35.82	---	---	51.37	---	---	1973	86213
T6	Sheet	0.12	R.T.	T-L	77.0	3.000	0.125	1.200	2.055	---	20.30	30.99	31.1	0.1	52.89*	---	---	1973	86213
		0.12			77.0	3.000	0.125	1.300	2.033	---	19.20	31.12			49.23			1973	86213
T76	Sheet	0.06	R.T.	L-T	71.6	3.000	0.064	1.200	2.059	---	32.00	48.84	50.1	1.8	83.62*	---	---	1973	86213
		0.06			71.6	3.000	0.064	1.120	2.010	---	35.40	51.45			89.36*			1973	86213
T76	Sheet	0.12	R.T.	L-T	67.4	3.000	0.130	1.150	2.093	---	34.20	50.63*	---	---	91.64*	---	---	1973	86213
		0.12			67.4	3.000	0.131	1.260	2.150	---	31.80	50.33*			89.07*			1973	86213
T76	Sheet	0.06	R.T.	T-L	71.4	3.000	0.064	1.140	1.824	---	29.70	43.70	43.2	0.7	66.15*	---	---	1973	86213
		0.06			71.4	3.000	0.065	1.240	1.910	---	27.30	42.69			64.33*			1973	86213
T76	Sheet	0.12	R.T.	T-L	66.8	3.000	0.132	1.210	2.089	---	29.50	45.30	45.5	0.3	78.81*	---	---	1973	86213
		0.12			66.8	3.000	0.132	1.200	2.015	---	30.00	45.79			75.95*			1973	86213

* NOTE: NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STANDARD DEVIATION.

TABLE 8.19.1.1

MEAN PLANE STRAIN FRACTURE TOUGHNESS FOR ALUMINUM 7000/8000 SERIES ALLOY 7475 AT ROOM TEMPERATURE

Product Form	Condition/Heat Treatment	K_{Ic} ($ksi\sqrt{in}$)								
		Specimen Orientation								
		L-T			T-L			S-L		
		Mean K_{Ic}	Std Dev	n	Mean K_{Ic}	Std Dev	n	Mean K_{Ic}	Std Dev	n
Plate	T651	40.1	2.4	19	34.6	3.5	120	32.9	2.5	8
	T651 (SP)	35.3	1.9	8	34.4	2.1	11	27.3	1.6	10
	T7351	47.1	4.9	150	37.2	4.	109	30.6	2.7	60
	T7351 (SP)	---	---	---	37.6	2.5	17	---	---	---
	T7651	42.1	3.7	11	34.	2.9	8	27.6	0.8	5
	T7651 (SP)	42.4	2.9	3	35.7	0.4	3	27.3	2.1	6

TABLE 8.19.1.2.1

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF STRESS INTENSITY FACTOR ΔK 7475 AT ROOM TEMPERATURE

ORIENTATION: L-T **ENVIRONMENT: 3.5% NaCl**

CONDITION/ HEAT TREATMENT	PRODUCT FORM	R	FREQ (Hz)	*FCGR* (10^{-6} *in/cycle*)					
				ΔK *Level* ($Ksi\sqrt{in}$)					
				2.5	5.0	10.0	20.0	50.0	100.0
T61	SHEET	0.05	2				158.74		

TABLE 8.19.1.2.2

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF STRESS INTENSITY FACTOR ΔK
7475 AT ROOM TEMPERATURE

ORIENTATION: L-T **ENVIRONMENT: Distilled Water**

CONDITION/ HEAT TREATMENT	PRODUCT FORM	R	FREQ (Hz)	*FCGR* (10^{-6} *in/cycle*) ΔK *Level* (*Ksi√in*)					
				2.5	5.0	10.0	20.0	50.0	100.0
T7351	PLATE	0.05	1			5.97	40.97		
		0.8	1		2.64				
T761	SHEET	0.05	1			7.27			
		0.05	1			7.04	52.88		
		0.05	1			7.85	79.12		
		0.8	1		2.72				
		0.8	1	0.4	3.02				
		0.8	1		3.74				
T7651	PLATE	0.05	1			5.82	34.93		
		0.8	1		2.86				
T7651; 255F 4HR	PLATE	0.05	1			3.91	51.69		
		0.8	1		2.62				

TABLE 8.19.1.2.3

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF STRESS INTENSITY FACTOR ΔK 7475 AT ROOM TEMPERATURE

ORIENTATION: L-T **ENVIRONMENT: Dry Air**

CONDITION/ HEAT TREATMENT	PRODUCT FORM	R	FREQ (Hz)	*FCGR* (10^{-6} *in/cycle*)					
				ΔK *Level* ($Ksi\sqrt{in}$)					
				2.5	5.0	10.0	20.0	50.0	100.0
T61	SHEET	0.33	13.3			10.24			
T7351	PLATE	0.1	6		0.25	2.71	43.48		
		0.3	6		0.34	5.89	59.13		
		0.33	2-20			4.94			
		0.5	6		0.6	8.83	75.52		
T761	SHEET	0.33	13.3			8.66	59.23		
T7651	PLATE	-0.2	6		0.18	3.73	31.55		
		0.1	6			3.64	39.02		
		0.1	20		1.04	5.63			
		0.3	6		0.61				
		0.5	6	0.11	1.14	11.83			

TABLE 8.19.1.2.4

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF STRESS INTENSITY FACTOR ΔK 7475 AT ROOM TEMPERATURE

ORIENTATION: L-T **ENVIRONMENT: H.H.A.**

CONDITION/ HEAT TREATMENT	PRODUCT FORM	R	FREQ (Hz)	FCGR (10^{-6} in/cycle) ΔK Level (Ksi√in) 2.5	5.0	10.0	20.0	50.0	100.0
T61	SHEET	0.05	2				42.27		
		0.05	2				57.03		
		0.05	2					962.28	
		0.33	13.3			28.74			
T651	PLATE	0.33	5.2			33.3	302.31		
		0.33	25	0.05					
		0.33			0.93	35.45	242.07		
T7351	PLATE	0.1	1			3.17	48.06		
		0.1	9-30		0.26				
		0.1	9-30			10.2	100.48		
		0.25	5.5-33	0.03					
		0.33	25	0.06	0.91	13.03	87.6		
		0.5	6-33	0.11					
		0.5	6-33			20.57			
T761	SHEET	0.33	13.3			19.22			
T7651	PLATE	0.1	0.1			6.27			

TABLE 8.19.1.2.5

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF STRESS INTENSITY FACTOR ΔK
7475 AT ROOM TEMPERATURE

ORIENTATION: L-T **ENVIRONMENT: JP-4 Jet Fuel**

CONDITION/ HEAT TREATMENT	PRODUCT FORM	R	FREQ (Hz)	*FCGR* (10^{-6} *in/cycle*)					
				Δ*K Level* (*Ksi*√*in*)					
				2.5	5.0	10.0	20.0	50.0	100.0
T7351	PLATE	0.02	0.1-20		0.46	4.46	43.15		

TABLE 8.19.1.2.6

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF STRESS INTENSITY FACTOR ΔK 7475 AT ROOM TEMPERATURE

ORIENTATION: L-T **ENVIRONMENT: Lab Air**

CONDITION/ HEAT TREATMENT	PRODUCT FORM	R	FREQ (Hz)	*FCGR* (10^{-6} *in/cycle*)					
				Δ*K Level* (*Ksi√in*)					
				2.5	5.0	10.0	20.0	50.0	100.0
T6	SHEET	0.1	5				45.57		
		0.1	10			4.74			
		0.3	10			9.35	77.1		
		0.5	5		2.14				
		0.5	10			12.44			
T61	PLATE	0.1	20			6.53			
T6151	SHEET	0.1	20			5.12	43.17		
T651	PLATE	0.33	25		1.03	18.69			
T7351	PLATE	-1	1					801.56	
		-1	2-15		0.4				
		0.02	0.1-20		0.21	4.39	40.96		
		0.05	5	0.05	0.55	5.31	39.92	575.67	
		0.1	10		0.25	4.99			
		0.1	5-10			6.44	66.02		
		0.1	5-20	0.03	0.34	5.49	49.68		
		0.1	20			5.65			

TABLE 8.19.1.2.6 (CONTINUED)

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF STRESS INTENSITY FACTOR ΔK 7475 AT ROOM TEMPERATURE

ORIENTATION: L-T **ENVIRONMENT: Lab Air**

CONDITION/ HEAT TREATMENT	PRODUCT FORM	R	FREQ (Hz)	FCGR (10^{-6} in/cycle) ΔK Level (Ksi√in)					
				2.5	5.0	10.0	20.0	50.0	100.0
T7351 (Cont'd)	PLATE (Cont'd)	0.4	5-15		0.95				
		0.4	20	0.15	1.03	10.09	64.81		
		0.5	10		1.05	14.52			
		0.8	20	0.16	2.43				
		0.8	5-30	0.14	2.46				
T761	SHEET	0.1	3				44.02	994.06	
		0.1	7	0.07	0.9	8.75	39.95		
		0.1	3-20	0.09	0.6	7.27	40.61		
		0.1	20			5.65	32.53		
		0.4	5	0.14	1.61	13.29	58.93		
		0.4	5-15	0.13	1.74	19.64	69.11		
		0.8	10	0.3	3.67	16.04			
		0.8	3-15	0.07	2.02	23.06			
T7651	SHEET	0.	6			4.2	41.52		
		0.	30		0.28				
		0.4	30		1.02				

TABLE 8.19.1.2.6 (CONCLUDED)

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF STRESS INTENSITY FACTOR ΔK 7475 AT ROOM TEMPERATURE

ORIENTATION: L-T **ENVIRONMENT: Lab Air**

CONDITION/ HEAT TREATMENT	PRODUCT FORM	R	FREQ (Hz)	*FCGR* (10^{-6} *in/cycle*)					
				ΔK *Level* ($Ksi\sqrt{in}$)					
				2.5	5.0	10.0	20.0	50.0	100.0
T7651 (Cont'd)	SHEET (Cont'd)	0.4	---				76.25		
		0.8	2			21.49			
		0.8	5-10		3.51				
	PLATE	0.	3					512.41	
		0.05	5			6.47	44.83		
		0.05	5-10		0.24				
		0.4	10		0.93	8.86	46.88		
		0.4	20	0.08	0.88				
		0.8	10		4.04				
		0.8	30	0.14	2.25				
T7651; 255F 4HR	PLATE	0.05	8		0.39	7.59	90.38	665.88	
		0.4	5						
		0.4	5-15	0.1	1.53				
		0.8	10-15	0.25	3.34	19.14			

TABLE 8.19.1.2.7

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF STRESS INTENSITY FACTOR ΔK
7475 AT ROOM TEMPERATURE

ORIENTATION: L-T **ENVIRONMENT: S.S.W.**

CONDITION/ HEAT TREATMENT	PRODUCT FORM	R	FREQ (Hz)	*FCGR* (10^{-6} *in/cycle*) ΔK *Level* (*Ksi√in*)					
				2.5	5.0	10.0	20.0	50.0	100.0
T7351	PLATE	0.02	0.1-20		0.43	6.73	62.57		

TABLE 8.19.1.2.8

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF STRESS INTENSITY FACTOR ΔK 7475 AT ROOM TEMPERATURE

ORIENTATION: L-T **ENVIRONMENT: S.T.W.**

CONDITION/ HEAT TREATMENT	PRODUCT FORM	R	FREQ (Hz)	*FCGR* (10^{-6} *in/cycle*)					
				ΔK *Level* ($Ksi\sqrt{in}$)					
				2.5	5.0	10.0	20.0	50.0	100.0
T7351	PLATE	-0.2	1			3.02			
		0.1	1			21.06	131.96		
		0.1	1		0.72	13.32			
		0.1	6			8.55			
		0.3	1			45.97	174.12		
		0.3	1		0.68	30.24			
		0.33	2-20			22.15			
		0.5	1		1.63	65.27	338.64		
		0.5	1		4.57	43.67			
T7651	SHEET	0.	1			27.14			
		0.01	1-5			31.99			
	PLATE	-0.2	1		0.38	20.48			
		0.1	0.1			14.93	186.07		
		0.1	1		0.3	26.41	122.35		
		0.3	1		1.16	36.33	162.49		
		0.5	1		4.07	44.79			

TABLE 8.19.1.2.9

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF STRESS INTENSITY FACTOR ΔK 7475 AT ROOM TEMPERATURE

ORIENTATION: L-T **ENVIRONMENT: Salt Fog**

CONDITION/ HEAT TREATMENT	PRODUCT FORM	R	FREQ (Hz)	*FCGR* (10^{-6} *in/cycle*) ΔK *Level* (*Ksi√in*)					
				2.5	5.0	10.0	20.0	50.0	100.0
T61	SHEET	0.33	13.3			43.76			
T761	SHEET	0.33	13.3			35.76	184.56		

TABLE 8.19.1.2.10

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF STRESS INTENSITY FACTOR ΔK 7475 AT ROOM TEMPERATURE

ORIENTATION: T-L **ENVIRONMENT: 3.5% NaCl**

CONDITION/ HEAT TREATMENT	PRODUCT FORM	R	FREQ (Hz)	*FCGR* (10^{-6} *in/cycle*) ΔK *Level* (*Ksi*$\sqrt{in}$) 2.5	5.0	10.0	20.0	50.0	100.0
T61	SHEET	0.05	2				190.67		
T761	SHEET	0.05	2				147.17		

TABLE 8.19.1.2.11

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF STRESS INTENSITY FACTOR ΔK 7475 AT ROOM TEMPERATURE

ORIENTATION: T-L **ENVIRONMENT: Dry Air**

CONDITION/ HEAT TREATMENT	PRODUCT FORM	R	FREQ (Hz)	*FCGR* (10^{-6} *in/cycle*)					
				ΔK *Level* (*Ksi√in*)					
				2.5	5.0	10.0	20.0	50.0	100.0
T61	SHEET	0.33	13.3			11.47	89.65		
		0.33	13.3			8.87			
T651	PLATE	0.1	1		0.89	8.52			
T7351	PLATE	0.1	6		0.24	3.33	53.54		
		0.3	6		0.39	7.64	65.97		
		0.5	6		0.75				
T761	SHEET	0.33	13.3			10.6	73.63		
		0.33	13.3			8.21			

TABLE 8.19.1.2.12

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF STRESS INTENSITY FACTOR ΔK 7475 AT ROOM TEMPERATURE

ORIENTATION: T-L **ENVIRONMENT: H.H.A.**

CONDITION/ HEAT TREATMENT	PRODUCT FORM	R	FREQ (Hz)	FCGR (10^{-6} in/cycle) ΔK Level (Ksi√in)					
				2.5	5.0	10.0	20.0	50.0	100.0
T61	SHEET	0.33	13.3			21.32			
		0.33	13.3			26.31	180.58		
T7351	PLATE	0.1	0.1			4.5	50.43		
		0.1	1			3.58	49.24		
		0.33	2-20			12.6			
T761	SHEET	0.25	2			10.96	59.88		
		0.33	13.3			19.94			
		0.33	13.3			19.96	113.02		

TABLE 8.19.1.2.13

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF STRESS INTENSITY FACTOR ΔK 7475 AT ROOM TEMPERATURE

ORIENTATION: T-L **ENVIRONMENT: L.H.A.**

CONDITION/ HEAT TREATMENT	PRODUCT FORM	R	FREQ (Hz)	*FCGR* (10^{-6} *in/cycle*) ΔK Level (Ksi√in) 2.5	5.0	10.0	20.0	50.0	100.0
T7351	PLATE	0.33	2-20			4.72	114.75		
		0.33	2-30		0.3	4.08			
		0.33	30			1.96	62.02		
		0.33	2-30		0.19	4.08	57.6		
		0.33	2-30		0.36	3.93			

TABLE 8.19.1.2.14

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF STRESS INTENSITY FACTOR ΔK 7475 AT ROOM TEMPERATURE

ORIENTATION: T-L **ENVIRONMENT: Lab Air**

CONDITION/ HEAT TREATMENT	PRODUCT FORM	R	FREQ (Hz)	*FCGR* (10^{-6} *in/cycle*) ΔK Level (Ksi√in)					
				2.5	5.0	10.0	20.0	50.0	100.0
T6151	SHEET	0.1	20			6.79	46.35		
T76	SHEET	0.33	13.3			9.29			
T761	SHEET	0.1	20			4.27	43.73		

TABLE 8.19.1.2.15

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF STRESS INTENSITY FACTOR ΔK 7475 AT ROOM TEMPERATURE

ORIENTATION: T-L **ENVIRONMENT: S.T.W.**

CONDITION/ HEAT TREATMENT	PRODUCT FORM	R	FREQ (Hz)	*FCGR* (10^{-6} *in/cycle*) ΔK Level (Ksi√in) 2.5	5.0	10.0	20.0	50.0	100.0
T7351	PLATE	0.1	1			7.62	124.08		
		0.3	1		0.34	42.7	221.11		
		0.33	2			39.16			
		0.33	20			22.07			
		0.33	20		1.18	21.93			
		0.33	30		1.27				
		0.5	1		1.41	44.89	370.99		

TABLE 8.19.1.2.16

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF STRESS INTENSITY FACTOR ΔK 7475 AT ROOM TEMPERATURE

ORIENTATION: T-L **ENVIRONMENT: Salt Fog**

CONDITION/ HEAT TREATMENT	PRODUCT FORM	R	FREQ (Hz)	*FCGR* (10^{-6} *in/cycle*) *ΔK Level* (*Ksi√in*)					
				2.5	5.0	10.0	20.0	50.0	100.0
T61	SHEET	0.33	13.3			40.19	208.85		
		0.33	13.3			30.03			
T761	SHEET	0.33	13.3			39.31	191.15		
		0.33	13.3			33.86			

TABLE 8.19.1.2.17

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF STRESS INTENSITY FACTOR ΔK 7475 AT ROOM TEMPERATURE

ORIENTATION: S-L **ENVIRONMENT: Dry Air**

CONDITION/ HEAT TREATMENT	PRODUCT FORM	R	FREQ (Hz)	*FCGR* (10^{-6} *in/cycle*)					
				ΔK *Level* (*Ksi√in*)					
				2.5	5.0	10.0	20.0	50.0	100.0
T7351	PLATE	0.1	6		0.79	7.48	141.92		
		0.33	2-20			5.52			
		0.5	6		1.37	25.12			

TABLE 8.19.1.2.18

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF STRESS INTENSITY FACTOR ΔK 7475 AT ROOM TEMPERATURE

ORIENTATION: S-L **ENVIRONMENT: H.H.A.**

CONDITION/ HEAT TREATMENT	PRODUCT FORM	R	FREQ (Hz)	*FCGR* (10^{-6} *in/cycle*) ΔK *Level* (*Ksi√in*)					
				2.5	5.0	10.0	20.0	50.0	100.0
T7351	PLATE	0.33	2-20			11.63			

TABLE 8.19.1.2.19

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF STRESS INTENSITY FACTOR ΔK 7475 AT ROOM TEMPERATURE

ORIENTATION: S-L **ENVIRONMENT: L.H.A.**

CONDITION/ HEAT TREATMENT	PRODUCT FORM	R	FREQ (Hz)	*FCGR* (10^{-6} *in/cycle*)					
				ΔK *Level* (*Ksi*$\sqrt{in}$)					
				2.5	5.0	10.0	20.0	50.0	100.0
T7351	PLATE	0.33	2-30		1.1	6.79			

TABLE 8.19.1.2.20

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF STRESS INTENSITY FACTOR ΔK 7475 AT ROOM TEMPERATURE

ORIENTATION: S-L **ENVIRONMENT: S.T.W.**

CONDITION/ HEAT TREATMENT	PRODUCT FORM	R	FREQ (Hz)	*FCGR* (10^{-6} *in/cycle*) ΔK Level (Ksi√in)					
				2.5	5.0	10.0	20.0	50.0	100.0
T7351	PLATE	0.1	1		2.07	35.29			
		0.3	1		4.21	45.75			
		0.33	20			23.15			
		0.5	1		4.71	58.2			

TABLE 8.19.1.2.21

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF STRESS INTENSITY FACTOR ΔK 7475 AT ROOM TEMPERATURE

ORIENTATION: Unspecified **ENVIRONMENT: 3.5% NaCl**

CONDITION/ HEAT TREATMENT	PRODUCT FORM	R	FREQ (Hz)	*FCGR* (10^{-6} *in/cycle*)					
				ΔK *Level* (*Ksi√in*)					
				2.5	5.0	10.0	20.0	50.0	100.0
T7651	PLATE	0.1	1			26.41			

TABLE 8.19.1.2.22

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF STRESS INTENSITY FACTOR ΔK 7475 AT ROOM TEMPERATURE

ORIENTATION: Unspecified **ENVIRONMENT: Dry Air**

CONDITION/ HEAT TREATMENT	PRODUCT FORM	R	FREQ (Hz)	*FCGR* (10^{-6} *in/cycle*) ΔK Level (Ksi√in)					
				2.5	5.0	10.0	20.0	50.0	100.0
T651	PLATE	0.1	20			9.31	41.23		
		0.1	20			5.76	37.18		
		0.1	20			3.36	19.35		

TABLE 8.19.2.1

ALUMINUM 7475 K_{Ic}

CONDITION	PRODUCT		TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN			CRACK LENGTH (in.) A	2.5 * (K_{Ic}/TYS)^2 (in.)	K_{Ic}			DATE	REFER
	FORM	THICK (in.)				WIDTH (in.) W	THICK (in.) B	DESIGN			K_{Ic} (Ksi√in.)	K_{Ic} MEAN	STAN DEV		
T6	Plate	1.62	83	S-L	69.6	1.000	0.499	CT	0.529	0.46	29.80	30.1	0.4	1973	86213
		1.62			69.6	1.000	0.499	CT	0.552	0.47	30.30			1973	86213
T651	Plate	0.95	R.T.	L-T	72.3	2.004	0.958	CT	1.042	0.75	40.40	40.1	2.4	1978	MPC01
		0.92			72.3	2.979	0.960	CT	1.549	0.81	41.90			1978	MPC01
		0.92			74.3	3.017	0.931	CT	1.569	0.87	44.00			1978	MPC01
		0.95			74.3	1.985	0.931	CT	1.032	0.72	40.60			1978	MPC01
		0.95			74.5	2.009	0.950	CT	1.065	0.70	40.10			1978	MPC01
		0.92			74.5	3.014	0.952	CT	1.537	0.78	42.20			1978	MPC01
		0.95			74.8	1.996	0.934	CT	1.058	0.72	40.50			1978	MPC01
		0.92			74.8	3.021	0.935	CT	1.571	0.81	43.20			1978	MPC01
		0.92			74.8	2.011	0.918	CT	1.086	0.78	42.60			1978	MPC01
		0.95			75.1	1.996	0.931	CT	1.038	0.78	42.40			1978	MPC01
		0.87			76.6	2.975	0.860	CT	1.547	0.67	40.10			1978	MPC01
		0.92			76.6	1.985	0.903	CT	1.072	0.72	41.60			1978	MPC01
		0.87			76.6	2.017	0.859	CT	1.049	0.65	39.10			1978	MPC01
		0.92			76.9	2.992	0.951	CT	1.496	0.52	36.00			1978	MPC01
		0.95			76.9	2.012	0.949	CT	1.046	0.52	35.40			1978	MPC01
		0.92			77.5	2.992	0.910	CT	1.526	0.60	38.70			1978	MPC01
		0.92			77.5	1.996	0.904	CT	1.098	0.55	36.80			1978	MPC01
		0.92			78.0	3.004	0.932	CT	1.532	0.57	38.00			1978	MPC01
		0.92			78.0	2.000	0.932	CT	1.040	0.60	38.70			1978	MPC01

TABLE 8.19.2.1 (CONTINUED)

ALUMINUM 7475 K_{Ic}

CONDITION	PRODUCT		TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN			CRACK LENGTH (in.) A	$2.5 * (K_Q/TYS)^2$ (in.)	K_{Ic}			DATE	REFER
	FORM	THICK (in.)				WIDTH (in.) W	THICK (in.) B	DESIGN			K_Q (Ksi√in.)	K_Q MEAN	STAN DEV		
		1.00			---	2.017	1.000	CT	1.049	---	38.80			1978	MPC01
		1.50			69.0	3.022	1.501	CT	1.541	0.60	34.00			1978	MPC01
		1.00			69.0	1.993	0.999	CT	1.056	0.84	40.50			1978	MPC01
		1.00			69.0	3.028	1.025	CT	1.605	0.90	41.80			1978	MPC01
		0.87			69.5	1.992	0.886	CT	1.036	0.62	35.30			1978	MPC01
		0.92			69.5	2.010	0.947	CT	1.045	0.60	34.70			1978	MPC01
		0.87			69.5	3.020	0.888	CT	1.510	0.62	35.30			1978	MPC01
		0.87			69.6	1.990	0.866	CT	1.035	0.72	38.10			1978	MPC01
		0.87			69.8	2.008	0.876	CT	1.004	0.62	35.30			1978	MPC01
		1.00			69.8	1.987	1.001	CT	1.053	0.57	34.00			1978	MPC01
		0.87			69.8	3.020	0.880	CT	1.540	0.72	38.30			1978	MPC01
T651	Plate	0.87	R.T.	T-L	70.6	2.988	0.882	CT	1.494	0.70	38.00	34.6	3.5	1978	MPC01
		1.00			70.6	2.017	0.999	CT	1.049	0.72	38.80			1978	MPC01
		0.92			70.6	2.011	0.959	CT	1.086	0.57	34.50			1978	MPC01
		0.87			70.6	1.996	0.880	CT	1.018	0.60	35.20			1978	MPC01
		1.00			70.6	2.979	1.006	CT	1.549	0.84	41.60			1978	MPC01
		0.87			70.7	1.983	0.873	CT	1.071	0.44	30.40			1978	MPC01
		1.00			70.7	3.024	0.993	CT	1.542	0.70	37.80			1978	MPC01
		1.00			70.7	1.993	0.990	CT	1.056	0.62	35.70			1978	MPC01
		0.87			70.8	2.000	0.889	CT	1.040	0.57	34.00			1978	MPC01
		0.87			71.0	2.000	0.871	CT	1.000	0.84	41.20			1978	MPC01
		0.87			71.1	2.010	0.871	CT	1.025	0.67	37.30			1978	MPC01
		0.87			71.1	2.981	0.873	CT	1.580	0.65	36.80			1978	MPC01

TABLE 8.19.2.1 (CONTINUED)

ALUMINUM 7475 K_{Ic}

CONDITION	PRODUCT		TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN			CRACK LENGTH (in.) A	2.5 * (K_{Ic}/TYS)^2 (in.)	K_{Ic}			DATE	REFER
	FORM	THICK (in.)				WIDTH (in.) W	THICK (in.) B	DESIGN			K_{Ic} (Ksi√in.)	K_{Ic} MEAN	STAN DEV		
		0.87			71.2	2.012	0.870	CT	1.026	0.52	33.20			1978	MPC01
		0.87			71.2	2.002	0.882	CT	1.061	0.84	41.30			1978	MPC01
		0.87			71.3	1.993	0.869	CT	1.056	0.55	34.10			1978	MPC01
		1.00			71.4	2.978	1.007	CT	1.519	0.81	40.80			1978	MPC01
		1.00			71.4	2.002	1.002	CT	1.021	0.70	38.30			1978	MPC01
		0.87			71.5	2.008	0.884	CT	1.024	0.60	35.10			1978	MPC01
		0.87			71.6	2.000	0.865	CT	1.000	0.72	38.80			1978	MPC01
		0.87			71.7	1.985	0.895	CT	1.052	0.50	32.40			1978	MPC01
		0.92			71.7	2.998	0.921	CT	1.529	0.52	33.40			1978	MPC01
		0.92			71.7	1.985	0.920	CT	1.032	0.46	31.50			1978	MPC01
		1.00			71.8	1.982	1.001	CT	1.090	0.50	32.60			1978	MPC01
T651 Cont'd	Plate Cont'd	0.92	R.T. Cont'd	T-L Cont'd	71.9	2.017	0.894	CT	1.069	0.65	37.30	Cont'd	Cont'd	1978	MPC01
		0.92			71.9	1.985	0.927	CT	1.052	0.52	33.60			1978	MPC01
		0.92			72.0	2.008	0.907	CT	1.004	0.52	33.40			1978	MPC01
		0.92			72.0	1.981	0.952	CT	1.030	0.50	32.90			1978	MPC01
		0.92			72.0	1.989	0.927	CT	1.054	0.57	35.10			1978	MPC01
		0.87			72.1	2.014	0.867	CT	1.047	0.55	34.60			1978	MPC01
		0.92			72.4	2.000	0.931	CT	1.040	0.62	36.90			1978	MPC01
		0.92			72.4	1.996	0.921	CT	1.018	0.62	36.40			1978	MPC01
		0.92			72.5	2.018	0.929	CT	1.029	0.52	33.60			1978	MPC01
		0.87			72.6	2.000	0.887	CT	1.040	0.50	33.30			1978	MPC01
		0.92			72.7	1.985	0.934	CT	1.032	0.52	33.70			1978	MPC01

TABLE 8.19.2.1 (CONTINUED)

ALUMINUM 7475 K_{Ic}

CONDITION	PRODUCT FORM	PRODUCT THICK (in.)	TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN WIDTH (in.) W	SPECIMEN THICK (in.) B	SPECIMEN DESIGN	CRACK LENGTH (in.) A	2.5 * (K_{Ic}/TYS)^2 (in.)	K_{Ic} K_{Ic} (Ksi√in.)	K_{Ic} K_{Ic} MEAN	K_{Ic} STAN DEV	DATE	REFER
T651 Cont'd	Plate Cont'd	0.62	R.T. Cont'd	T-L Cont'd	72.7	2.990	0.646	CT	1.509	0.45	30.80	Cont'd	Cont'd	1973	86213
		0.62			72.7	3.000	0.646	CT	1.516	0.53	33.60			1973	86213
		0.92			72.7	2.000	0.928	CT	1.040	0.52	34.00			1978	MPC01
		0.92			72.7	1.971	0.904	CT	1.025	0.60	35.70			1978	MPC01
		0.92			72.8	2.012	0.921	CT	1.046	0.50	33.30			1978	MPC01
		0.87			72.8	2.015	0.896	CT	1.048	0.50	33.30			1978	MPC01
		0.87			72.9	1.987	0.878	CT	1.053	0.62	36.50			1978	MPC01
		0.92			73.0	1.989	0.932	CT	1.054	0.48	32.70			1978	MPC01
		0.87			73.1	1.989	0.888	CT	1.034	0.50	33.20			1978	MPC01
		0.95			73.2	2.010	0.954	CT	1.005	0.62	36.60			1978	MPC01
		0.62			73.2	3.000	0.645	CT	1.539	0.49	32.30			1973	86213
		0.62			73.2	3.000	0.646	CT	1.476	0.41	29.80			1973	86213
		0.95			73.2	2.004	0.952	CT	1.062	0.65	37.50			1978	MPC01
		0.95			73.2	1.992	0.955	CT	1.036	0.57	35.40			1978	MPC01
		0.92			73.3	2.006	0.932	CT	1.043	0.52	34.20			1978	MPC01
		0.92			73.4	2.014	0.929	CT	1.007	0.60	36.10			1978	MPC01
		1.00			73.4	2.013	0.978	CT	1.067	0.42	30.20			1978	MPC01
		1.00			73.4	1.983	0.993	CT	1.071	0.48	32.70			1978	MPC01
		0.87			73.6	3.018	0.881	CT	1.509	0.48	32.70			1978	MPC01
		0.87			73.6	1.998	0.878	CT	1.039	0.60	32.00			1978	MPC01
		0.87			73.7	1.984	0.865	CT	0.972	0.81	42.30			1978	MPC01
		0.87			73.7	1.994	0.872	CT	0.937	0.87	43.60			1978	MPC01

TABLE 8.19.2.1 (CONTINUED)

ALUMINUM 7475 K_{Ic}

CONDITION	PRODUCT FORM	PRODUCT THICK (in.)	TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN WIDTH (in.) W	SPECIMEN THICK (in.) B	SPECIMEN DESIGN	CRACK LENGTH (in.) A	$2.5 * (K_{Ic}/TYS)^2$ (in.)	K_{Ic} (Ksi√in.)	K_{Ic} MEAN	STAN DEV	DATE	REFER
T651 Cont'd	Plate Cont'd	0.87	R.T. Cont'd	T-L Cont'd	73.9	2.992	0.873	CT	1.556	0.40	29.60	Cont'd	Cont'd	1978	MPC01
		0.87			73.9	2.013	0.886	CT	1.087	0.44	31.70			1978	MPC01
		0.87			73.9	1.980	0.873	CT	1.010	0.38	29.50			1978	MPC01
		0.92			73.9	1.981	0.922	CT	1.030	0.52	34.10			1978	MPC01
		0.92			74.0	1.990	0.911	CT	1.035	0.57	36.10			1978	MPC01
		0.92			74.0	1.996	0.927	CT	1.038	0.50	33.70			1978	MPC01
		0.95			74.1	2.012	0.956	CT	1.046	0.72	40.40			1978	MPC01
		0.92			74.2	1.989	0.918	CT	1.034	0.55	35.30			1978	MPC01
		0.87			74.3	1.998	0.872	CT	1.019	0.38	29.30			1978	MPC01
		0.87			74.3	2.998	0.879	CT	1.499	0.42	31.10			1978	MPC01
		0.87			74.3	2.015	0.877	CT	1.088	0.55	35.00			1978	MPC01
		0.92			74.3	2.004	0.920	CT	1.042	0.48	32.90			1978	MPC01
		0.92			74.3	3.026	0.919	CT	1.543	0.62	37.20			1978	MPC01
		0.92			74.3	1.988	0.903	CT	0.994	0.57	36.00			1978	MPC01
		0.92			74.4	2.002	0.920	CT	1.001	0.46	32.50			1978	MPC01
		1.00			74.5	2.000	1.011	CT	1.020	0.36	28.50			1978	MPC01
		1.00			74.5	1.983	1.011	CT	1.051	0.36	28.90			1978	MPC01
		0.87			74.5	1.993	0.860	CT	1.056	0.44	31.70			1978	MPC01
		1.00			74.5	1.979	1.011	CT	1.049	0.36	28.80			1978	MPC01
		0.75			74.6	4.955	0.751	CT	2.527	0.72	40.30			1978	MPC01
		0.87			74.6	2.013	0.866	CT	0.966	0.78	41.90			1978	MPC01
		0.92			74.8	3.024	0.908	CT	1.542	0.57	36.30			1978	MPC01

TABLE 8.19.2.1 (CONTINUED)

ALUMINUM 7475 K_{Ic}

CONDITION	PRODUCT		TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN			CRACK LENGTH (in.) A	2.5 * (K_{Ic}/TYS)^2 (in.)	K_{Ic}			DATE	REFER
	FORM	THICK (in.)				WIDTH (in.) W	THICK (in.) B	DESIGN			K_{Ic} (Ksi√in.)	K_{Ic} MEAN	STAN DEV		
T651 Cont'd	Plate Cont'd	0.92	R.T. Cont'd	T-L Cont'd	74.8	2.004	0.908	CT	1.042	0.60	36.70	Cont'd	Cont'd	1978	MPC01
		0.92			74.9	1.996	0.919	CT	1.038	0.48	33.50			1978	MPC01
		0.92			75.0	1.981	0.907	CT	1.030	0.38	29.80			1978	MPC01
		1.00			75.0	2.000	0.964	CT	1.026	0.48	33.00			1973	86213
		0.75			75.1	4.967	0.759	CT	2.533	0.70	40.30			1978	MPC01
		1.00			75.4	1.985	1.010	CT	1.052	0.40	30.30			1978	MPC01
		1.00			75.4	2.000	1.010	CT	1.060	0.42	31.00			1978	MPC01
		1.00			75.4	2.012	1.010	CT	1.046	0.38	30.00			1978	MPC01
		0.92			75.4	1.983	0.925	CT	1.031	0.46	33.10			1978	MPC01
		0.92			75.4	1.988	0.904	CT	1.014	0.44	32.40			1978	MPC01
		0.75			75.4	4.943	0.749	CT	2.521	0.67	39.50			1978	MPC01
		0.92			75.5	1.984	0.917	CT	1.012	0.50	34.10			1978	MPC01
		0.92			75.5	3.006	0.918	CT	1.533	0.62	37.80			1978	MPC01
		0.75			75.6	5.046	0.748	CT	2.523	0.65	39.20			1978	MPC01
		1.00			75.7	1.993	1.002	CT	1.056	0.44	31.80			1978	MPC01
		1.00			75.7	2.019	1.002	CT	1.070	0.40	30.80			1978	MPC01
		0.87			75.7	1.983	0.867	CT	1.031	0.42	31.60			1978	MPC01
		1.00			75.7	1.987	1.003	CT	1.053	0.40	30.30			1978	MPC01
		0.87			75.9	1.996	0.873	CT	1.018	0.52	35.20			1978	MPC01
		0.87			76.0	1.979	0.881	CT	1.029	0.50	34.20			1978	MPC01
		0.87			76.1	2.014	0.870	CT	1.047	0.57	36.80			1978	MPC01
		1.00			76.1	1.998	0.982	CT	1.079	0.44	32.40			1978	MPC01

TABLE 8.19.2.1 (CONTINUED)

ALUMINUM 7475 K_{Ic}

CONDITION	PRODUCT		TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN			CRACK LENGTH (in.) A	$2.5 * (K_Q/TYS)^2$ (in.)	K_{Ic}			DATE	REFER
	FORM	THICK (in.)				WIDTH (in.) W	THICK (in.) B	DESIGN			K_Q (Ksi√in.)	K_Q MEAN	STAN DEV		
T651 Cont'd	Plate Cont'd	1.00	R.T. Cont'd	T-L Cont'd	76.5	2.018	1.006	CT	1.029	0.40	30.70	Cont'd	Cont'd	1978	MPC01
		1.00			76.5	1.985	1.006	CT	1.052	0.42	31.80			1978	MPC01
		1.00			76.5	1.996	1.004	CT	1.038	0.38	30.50			1978	MPC01
		0.75			76.6	4.969	0.741	CT	2.534	0.67	40.50			1978	MPC01
		0.87			76.7	1.989	0.876	CT	1.034	0.48	34.50			1978	MPC01
		0.92			76.8	1.994	0.950	CT	1.017	0.34	28.70			1978	MPC01
		0.92			76.9	2.011	0.905	CT	1.086	0.40	31.10			1978	MPC01
		0.92			77.1	1.988	0.932	CT	0.994	0.38	30.30			1978	MPC01
		1.00			77.3	1.996	1.005	CT	1.038	0.30	27.20			1978	MPC01
T651	Plate	2.62	R.T.	S-L	61.7	2.000	1.001	CT	0.976	0.73	33.30	32.9	2.5	1973	86213
		2.62			61.8	2.000	1.001	CT	0.981	0.66	31.80			1973	86213
		2.62			62.2	2.000	1.001	CT	0.990	0.63	31.30			1973	86213
		2.62			62.2	2.000	1.001	CT	0.985	0.52	28.40			1973	86213
		2.62			62.2	2.000	1.001	CT	1.015	0.76	34.40			1973	86213
		2.62			62.6	2.000	1.000	CT	1.010	0.85	36.50			1973	86213
		2.62			62.7	2.000	1.001	CT	1.011	0.78	35.10			1973	86213
		2.62			63.8	2.000	1.001	CT	1.002	0.64	32.30			1973	86213
T651	Plate	1.62	83	T-L	73.0	1.490	0.750	CT	0.747	0.49	32.40	31.5	1.9	1973	86213
		1.62			73.0	1.490	0.739	CT	0.737	0.53	33.70			1973	86213
		1.62			74.6	1.490	0.750	CT	0.755	0.41	30.30			1973	86213
		1.62			74.6	1.490	0.750	CT	0.738	0.39	29.50			1973	86213
T651	Plate	1.62	83	S-L	68.1	1.000	0.499	CT	0.499	0.32	24.50	---	---	1973	86213

TABLE 8.19.2.1 (CONTINUED)

ALUMINUM 7475 K_{Ic}

CONDITION	PRODUCT FORM	PRODUCT THICK (in.)	TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN WIDTH (in.) W	SPECIMEN THICK (in.) B	SPECIMEN DESIGN	CRACK LENGTH (in.) A	$2.5 * (K_{Ic}/TYS)^2$ (in.)	K_{Ic} (Ksi√in.)	K_{Ic} MEAN	STAN DEV	DATE	REFER
T651 (SP)	Plate	1.30	R.T.	L-T	75.0	3.000	1.281	CT	1.603	0.63	37.70	35.3	1.9	1973	86213
		1.30			75.0	3.000	1.282	CT	1.595	0.60	36.60			1973	86213
		1.30			77.4	3.000	1.305	CT	1.614	0.52	35.40			1973	86213
		1.30			77.4	3.000	1.304	CT	1.600	0.50	34.50			1973	86213
		1.30			78.5	3.000	1.293	CT	1.611	0.57	37.40			1973	86213
		1.30			79.0	3.000	1.314	CT	1.608	0.50	35.20			1973	86213
		1.30			81.3	3.000	1.277	CT	1.610	0.41	32.80			1973	86213
		1.30			81.3	3.000	1.278	CT	1.607	0.41	32.90			1973	86213
T651 (SP)	Plate	2.00	R.T.	T-L	70.5	3.990	2.032	CT	2.110	0.62	35.10	34.4	2.1	1973	86213
		2.00			70.5	4.000	2.030	CT	2.120	0.58	33.90			1973	86213
		1.30			72.3	3.000	1.283	CT	1.584	0.65	36.90			1973	86213
		1.30			72.3	3.000	1.281	CT	1.579	0.65	36.80			1973	86213
		1.75			73.1	4.000	1.784	CT	2.182	0.41	29.60			1973	86213
		1.30			74.9	3.000	1.305	CT	1.617	0.54	34.70			1973	86213
		1.30			74.9	3.000	1.305	CT	1.584	0.51	33.70			1973	86213
		1.30			75.5	3.000	1.336	CT	1.601	0.50	33.80			1973	86213
		1.30			76.7	3.000	1.313	CT	1.599	0.51	34.70			1973	86213
		1.30			77.3	3.000	1.290	CT	1.600	0.55	36.40			1973	86213
		1.30			78.1	3.000	1.276	CT	1.613	0.45	33.20			1973	86213
T651 (SP)	Plate	1.30	R.T.	S-L	66.8	1.000	0.498	CT	0.496	0.48	29.20	27.3	1.6	1973	86213
		1.30			67.2	1.000	0.499	CT	0.501	0.47	29.20			1973	86213
		1.30			67.8	1.000	0.498	CT	0.489	0.41	27.30			1973	86213
		1.30			67.8	1.000	0.498	CT	0.512	0.37	26.00			1973	86213

TABLE 8.19.2.1 (CONTINUED)

ALUMINUM 7475 K_{Ic}

CONDITION	PRODUCT FORM	PRODUCT THICK (in.)	TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN WIDTH (in.) W	SPECIMEN THICK (in.) B	SPECIMEN DESIGN	CRACK LENGTH (in.) A	$2.5 \cdot (K_Q/TYS)^2$ (in.)	K_{Ic}: K_Q (Ksi√in.)	K_{Ic}: K_Q MEAN	K_{Ic}: STAN DEV	DATE	REFER
T651 (SP) Cont'd	Plate Cont'd	1.30	R.T. Cont'd	S-L Cont'd	68.0	1.000	0.498	CT	0.502	0.40	27.20	Cont'd	Cont'd	1973	86213
		1.30			68.0	1.000	0.498	CT	0.506	0.48	29.80			1973	86213
		1.30			68.4	1.000	0.498	CT	0.504	0.35	25.60			1973	86213
		1.30			68.4	1.000	0.499	CT	0.500	0.34	25.30			1973	86213
		1.30			70.8	1.000	0.499	CT	0.506	0.37	27.10			1973	86213
		1.30			70.8	1.000	0.498	CT	0.513	0.36	26.70			1973	86213
T651 (SP)	Plate	1.30	82	T-L	75.5	5.000	1.343	CT	2.658	0.62	37.70	38.5	1.1	1973	86213
		1.30			75.5	5.000	1.343	CT	2.704	0.67	39.20			1973	86213
T651 (SP)	Plate	2.00	82	S-L	62.6	1.490	0.748	CT	0.768	0.70	33.20	25.0	7.2	1973	86213
		1.75			66.3	1.000	0.500	CT	0.478	0.23	19.90			1973	86213
		1.75			66.3	1.000	0.499	CT	0.496	0.27	21.80			1973	86213
T73	Plate	1.62	83	T-L	70.0	1.490	0.749	CT	0.783	0.66	36.00	36.7	0.8	1973	86213
		1.62			70.4	1.490	0.750	CT	0.798	0.71	37.60			1973	86213
		1.62			70.4	1.490	0.750	CT	0.774	0.68	36.60			1973	86213
T73	Plate	1.62	83	S-L	68.9	1.000	0.500	CT	0.510	0.48	30.10	29.4	0.6	1973	86213
		1.62			68.9	1.000	0.501	CT	0.490	0.45	29.20			1973	86213
		1.62			69.1	1.000	0.499	CT	0.481	0.44	29.00			1973	86213
T7351	Plate	3.00	-72	T-L	61.3	4.998	2.505	CT	2.581	0.81	35.00	35.4	0.5	1978	GD006
		3.00			61.3	4.997	2.505	CT	2.612	0.84	35.70			1978	GD006
T7351	Plate	3.00	-72	S-L	57.4	1.997	1.000	CT	1.046	0.76	31.79	31.0	1.1	1978	GD006
		3.00			57.4	2.004	1.000	CT	1.049	0.69	30.20			1978	GD006
T7351	Plate	1.75	-65	L-T	67.6	3.000	1.501	CT	1.533	1.11	45.10	---	---	1987	DA004

TABLE 8.19.2.1 (CONTINUED)

ALUMINUM 7475 K_{Ic}

CONDITION	PRODUCT		TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN			CRACK LENGTH (in.) A	$2.5 * (K_Q/TYS)^2$ (in.)	K_{Ic}			DATE	REFER
	FORM	THICK (in.)				WIDTH (in.) W	THICK (in.) B	DESIGN			K_Q (Ksi√in.)	K_Q MEAN	STAN DEV		
T7351	Plate	1.75	-65	T-L	67.6	2.995	1.500	CT	1.508	1.07	44.30	---	---	1987	DA004
		4.00			55.2	3.003	1.498	CT	1.525	1.27	39.40			1977	RA006
		3.50			55.3	4.967	2.500	CT	2.583	1.76	47.00			1978	MPC01
		3.50			55.8	5.014	2.500	CT	2.607	1.89	48.90			1978	MPC01
		3.54			56.5	3.000	1.500	CT	1.454	1.42	42.70			1977	RA004
		3.00			56.7	5.978	2.983	CT	3.049	2.50	56.70			1978	MPC01
		3.00			56.7	5.982	3.000	CT	3.051	2.50	57.00			1978	MPC01
		3.50			56.7	4.985	2.500	CT	2.592	2.07	51.70			1978	MPC01
		3.00			56.7	5.035	2.501	CT	2.568	2.25	54.20			1978	MPC01
		3.00			56.7	4.969	2.503	CT	2.584	2.30	54.80			1978	MPC01
		3.50			56.7	5.049	2.500	CT	2.575	2.20	53.50			1978	MPC01
T7351	Plate	3.50	R.T.	L-T	57.0	5.049	2.500	CT	2.575	2.02	51.70			1978	MPC01
		3.50			57.1	5.035	2.499	CT	2.568	1.89	50.00	47.1	4.9	1978	MPC01
		3.00			57.2	5.003	2.503	CT	2.677	1.74	47.80			1978	RA003
		3.50			57.3	5.024	2.500	CT	2.562	1.72	47.60			1978	MPC01
		3.50			57.3	5.039	2.500	CT	2.620	1.98	51.20			1978	MPC01
		3.00			57.4	4.999	2.499	CT	2.663	1.72	47.70			1978	RA003
		2.80			57.5	4.982	2.500	CT	2.541	1.72	47.90			1978	MPC01
		3.62			57.6	3.005	1.487	CT	1.485	1.36	42.59			1977	RA006
		3.00			57.8	5.000	2.501	CT	2.597	1.28	41.50			1978	RA003
		2.75			57.9	5.026	2.500	CT	2.563	1.80	49.50			1978	MPC01
		2.75			57.9	5.982	2.757	CT	2.991	1.84	50.20			1978	MPC01
		2.75			57.9	5.986	2.759	CT	2.993	1.80	49.60			1978	MPC01

TABLE 8.19.2.1 (CONTINUED)

ALUMINUM 7475 K_{Ic}

CONDITION	PRODUCT FORM	PRODUCT THICK (in.)	TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN WIDTH (in.) W	SPECIMEN THICK (in.) B	SPECIMEN DESIGN	CRACK LENGTH (in.) A	$2.5 * (K_{Ic}/TYS)^2$ (in.)	K_{Ic} K_{Ic} (Ksi√in.)	K_{Ic} K_{Ic} MEAN	K_{Ic} STAN DEV	DATE	REFER
T7351 Cont'd	Plate Cont'd	3.50	R.T. Cont'd	L-T Cont'd	58.1	4.996	2.500	CT	2.548	2.11	53.90	Cont'd	Cont'd	1978	MPC01
		3.00			58.1	4.995	2.498	CT	2.577	1.11	38.80			1980	RA005
		3.00			58.1	4.997	2.493	CT	2.582	1.41	43.70			1978	RA003
		3.50			58.2	5.004	2.500	CT	2.602	1.48	45.10			1978	MPC01
		4.00			58.3	5.996	3.001	CT	3.178	2.35	57.00			1978	MPC01
		3.50			58.3	4.966	2.500	CT	2.632	1.89	50.80			1978	MPC01
		3.00			58.3	4.996	2.499	CT	2.635	1.54	45.80			1978	RA003
		3.00			58.3	4.997	2.499	CT	2.649	1.21	40.70			1978	RA003
		3.50			58.3	5.037	2.500	CT	2.619	1.80	50.10			1978	MPC01
		3.50			58.5	4.964	2.500	CT	2.631	1.76	49.30			1978	MPC01
		3.50			58.6	5.000	2.500	CT	2.600	1.44	44.60			1978	MPC01
		2.25			58.7	5.046	2.275	CT	2.523	1.93	51.70			1978	MPC01
		3.50			58.8	6.015	3.002	CT	3.128	1.76	49.70			1978	MPC01
		3.50			58.8	5.975	3.000	CT	3.107	1.72	49.20			1978	MPC01
		4.00			58.8	5.962	2.994	CT	3.160	1.76	49.50			1978	MPC01
		2.25			58.9	5.008	2.276	CT	2.554	1.89	51.60			1978	MPC01
		3.00			59.1	4.996	2.494	CT	2.649	1.67	48.40			1978	RA003
		3.50			59.1	6.017	3.000	CT	3.129	1.84	51.20			1978	MPC01
		3.50			59.1	5.951	3.000	CT	3.154	1.80	50.70			1978	MPC01
		3.00			59.1	4.999	2.496	CT	2.664	1.38	44.00			1978	RA003
		2.25			59.2	6.036	2.252	CT	3.018	1.72	49.20			1978	MPC01
		2.25			59.2	6.042	2.253	CT	3.021	1.68	48.80			1978	MPC01

TABLE 8.19.2.1 (CONTINUED)

ALUMINUM 7475 K_{Ic}

CONDITION	PRODUCT FORM	PRODUCT THICK (in.)	TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN WIDTH (in.) W	SPECIMEN THICK (in.) B	SPECIMEN DESIGN	CRACK LENGTH (in.) A	$2.5 * (K_{Ic}/TYS)^2$ (in.)	K_{Ic} (Ksi√in.)	K_{Ic} MEAN	STAN DEV	DATE	REFER
T7351 Cont'd	Plate Cont'd	3.50	R.T. Cont'd	L-T Cont'd	59.3	5.029	2.500	CT	2.615	2.02	53.60	Cont'd	Cont'd	1978	MPC01
		4.00			59.3	6.023	3.002	CT	3.192	2.40	58.20			1978	MPC01
		3.25			59.3	3.003	1.499	CT	1.500	0.91	35.80			1977	RA006
		2.40			59.5	5.977	2.385	CT	3.048	1.19	41.40			1978	MPC01
		3.00			59.5	4.998	2.505	CT	2.572	1.68	48.90			1978	GD006
		3.00			59.5	5.002	2.502	CT	2.570	1.75	49.80			1978	GD006
		2.30			59.6	5.044	2.258	CT	2.522	1.60	47.80			1978	MPC01
		2.25			59.6	5.006	2.275	CT	2.553	1.89	52.30			1978	MPC01
		3.00			59.7	5.040	2.502	CT	2.621	1.44	45.80			1978	MPC01
		2.25			59.7	5.020	2.270	CT	2.560	1.84	51.50			1978	MPC01
		4.00			59.9	6.000	3.001	CT	3.240	1.76	50.90			1978	MPC01
		4.00			60.0	4.959	2.500	CT	2.628	1.52	46.90			1978	MPC01
		3.00			60.0	4.994	2.501	CT	2.647	1.60	48.40			1978	MPC01
		3.00			60.0	4.977	2.502	CT	2.638	1.56	47.80			1978	MPC01
		3.00			60.1	4.992	2.495	CT	2.582	1.22	42.09			1978	RA003
		3.00			60.1	4.957	2.501	CT	2.627	1.56	47.70			1978	MPC01
		2.75			60.1	6.045	2.726	CT	3.083	2.16	56.20			1978	MPC01
		2.25			60.2	4.986	2.274	CT	2.543	1.76	51.00			1978	MPC01
		3.50			60.2	4.960	2.500	CT	2.579	1.68	49.40			1978	MPC01
		2.75			60.4	6.018	2.740	CT	3.009	1.48	47.00			1978	MPC01
		2.75			60.4	4.980	1.750	CT	2.540	1.60	48.70			1978	MPC01
		2.75			60.4	6.032	2.735	CT	3.016	1.48	46.70			1978	MPC01

TABLE 8.19.2.1 (CONTINUED)

ALUMINUM 7475 K_{Ic}

CONDITION	PRODUCT FORM	PRODUCT THICK (in.)	TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN WIDTH (in.) W	SPECIMEN THICK (in.) B	SPECIMEN DESIGN	CRACK LENGTH (in.) A	$2.5 * (K_{Ic}/TYS)^2$ (in.)	K_{Ic} K_{Ic} (Ksi√in.)	K_{Ic} K_{Ic} MEAN	K_{Ic} STAN DEV	DATE	REFER
		2.75			60.4	4.958	2.500	CT	2.578	1.48	46.60			1978	MPC01
		2.25			60.5	5.012	2.275	CT	2.556	1.76	51.00			1978	MPC01
		3.00			60.5	5.027	2.502	CT	2.614	1.48	46.90			1978	MPC01
		3.50			60.5	5.012	2.499	CT	2.606	1.64	49.40			1978	MPC01
		2.50			60.5	5.049	2.500	CT	2.575	1.68	49.80			1978	MPC01
		3.00			60.5	4.998	2.495	CT	2.575	1.02	38.70			1978	RA003
		3.50			60.6	5.015	2.500	CT	2.608	1.68	49.70			1978	MPC01
		3.25			60.6	3.004	1.478	CT	1.586	1.13	40.90			1977	RA006
		2.50			60.6	5.012	2.500	CT	2.606	1.72	50.60			1978	MPC01
		3.00			60.6	4.991	2.501	CT	2.645	1.68	49.70			1978	MPC01
T7351 Cont'd	Plate Cont'd	2.50	R.T. Cont'd	L-T Cont'd	60.7	5.004	2.500	CT	2.552	1.68	50.20	Cont'd	Cont'd	1978	MPC01
		3.00			60.8	5.000	2.502	CT	2.650	1.76	51.10			1978	MPC01
		3.00			60.8	5.019	2.502	CT	2.660	1.33	44.80			1978	MPC01
		3.00			60.9	4.999	2.488	CT	2.604	0.77	33.80			1978	RA003
		2.50			60.9	5.008	2.500	CT	2.554	1.22	43.20			1978	MPC01
		3.00			60.9	4.966	2.501	CT	2.632	1.15	41.70			1978	MPC01
		2.75			60.9	5.033	2.501	CT	2.567	1.76	51.30			1978	MPC01
		2.40			60.9	5.031	2.383	CT	2.566	1.60	48.90			1978	MPC01
		3.00			61.1	4.999	2.501	CT	2.625	1.00	38.80			1978	RA003
		2.00			61.1	5.056	2.088	CT	2.528	1.93	54.00			1978	MPC01
		3.50			61.2	5.033	2.488	CT	2.617	2.30	58.90			1978	MPC01
		2.40			61.2	5.004	2.379	CT	2.552	1.89	53.50			1978	MPC01

TABLE 8.19.2.1 (CONTINUED)

ALUMINUM 7475 K_{Ic}

CONDITION	PRODUCT FORM	PRODUCT THICK (in.)	TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN WIDTH (in.) W	SPECIMEN THICK (in.) B	SPECIMEN DESIGN	CRACK LENGTH (in.) A	$2.5 * (K_{Ic}/TYS)^2$ (in.)	K_{Ic} (Ksi√in.)	K_{Ic} MEAN	STAN DEV	DATE	REFER
T7351 Cont'd	Plate Cont'd	2.50	R.T. Cont'd	L-T Cont'd	61.4	4.967	2.500	CT	2.583	1.44	47.20	Cont'd	Cont'd	1978	MPC01
		3.00			61.5	4.998	2.496	CT	2.627	0.98	38.70			1978	RA003
		2.50			61.5	4.958	2.500	CT	2.578	1.26	44.10			1978	MPC01
		2.75			61.6	5.963	2.726	CT	3.041	1.52	48.60			1978	MPC01
		2.30			61.6	4.951	2.263	CT	2.525	1.48	47.50			1978	MPC01
		2.50			61.6	5.026	2.500	CT	2.563	1.60	49.40			1978	MPC01
		3.00			61.8	5.012	2.501	CT	2.556	1.22	43.70			1978	MPC01
		3.00			61.8	4.999	2.491	CT	2.628	1.06	40.40			1978	RA003
		3.00			61.9	4.987	2.502	CT	2.643	1.19	42.90			1978	MPC01
		2.40			61.9	5.000	2.333	CT	2.550	1.44	47.20			1978	MPC01
		2.25			61.9	6.008	2.261	CT	3.004	1.52	48.70			1978	MPC01
		3.50			61.9	4.992	2.499	CT	2.596	1.52	48.30			1978	MPC01
		2.25			61.9	5.996	2.263	CT	2.998	1.52	48.30			1978	MPC01
		1.25			62.0	3.996	1.995	CT	1.990	1.21	43.30			1977	MA005
		3.00			62.0	4.996	2.497	CT	2.639	1.15	42.20			1978	RA003
		1.25			62.0	3.996	1.994	CT	2.021	1.26	44.09			1977	MA005
		2.50			62.2	3.003	1.497	CT	1.557	0.64	39.50			1977	RA006
		2.40			62.4	5.986	2.364	CT	3.053	1.44	47.60			1978	MPC01
		3.00			62.4	5.041	2.500	CT	2.571	1.05	41.10			1978	MPC01
		3.00			62.4	4.999	2.493	CT	2.597	0.94	38.40			1978	RA003
		1.75			62.4	5.040	1.750	CT	2.520	1.60	50.20			1978	MPC01
		3.00			62.4	5.322	2.500	CT	2.661	1.19	43.10			1978	MPC01

TABLE 8.19.2.1 (CONTINUED)

ALUMINUM 7475 K_{Ic}

CONDITION	PRODUCT FORM	PRODUCT THICK (in.)	TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN WIDTH (in.) W	SPECIMEN THICK (in.) B	SPECIMEN DESIGN	CRACK LENGTH (in.) A	2.5 * $(K_{Ic}/TYS)^2$ (in.)	K_{Ic} K_{Ic} (Ksi√in.)	K_{Ic} K_{Ic} MEAN	K_{Ic} STAN DEV	DATE	REFER
T7351 Cont'd	Plate Cont'd	1.75	R.T. Cont'd	L-T Cont'd	62.6	5.028	1.748	CT	2.514	1.68	51.90	Cont'd	Cont'd	1978	MPC01
		1.75			62.6	5.030	1.774	CT	2.515	1.33	45.90			1978	MPC01
		2.70			62.6	5.017	2.500	CT	2.609	2.25	60.00			1978	MPC01
		1.75			62.8	4.955	1.760	CT	2.527	1.52	49.50			1978	MPC01
		1.77			62.8	2.999	1.499	CT	1.587	1.01	39.90			1977	RA004
		1.77			62.8	2.999	1.499	CT	1.618	1.00	39.80			1977	RA004
		3.00			63.0	4.997	2.498	CT	2.650	1.26	44.80			1980	RA005
		3.00			63.0	5.025	2.501	CT	2.663	1.22	44.50			1978	MPC01
		2.40			63.3	5.028	2.380	CT	2.514	1.08	42.40			1978	MPC01
		2.75			63.4	5.949	2.726	CT	3.034	1.36	47.20			1978	MPC01
		1.75			63.4	4.985	1.751	CT	2.592	1.44	48.40			1978	MPC01
		2.00			63.4	4.994	2.075	CT	2.547	1.98	56.80			1978	MPC01
		3.00			63.4	4.960	2.502	CT	2.579	1.08	42.20			1978	MPC01
		2.40			63.4	6.049	2.367	CT	3.085	1.12	42.70			1978	MPC01
		2.40			63.5	4.994	2.383	CT	2.497	1.02	41.10			1978	MPC01
		1.75			63.5	5.004	1.741	CT	2.552	1.52	50.10			1978	MPC01
		2.50			63.6	3.002	1.503	CT	1.634	1.10	42.30			1977	RA006
		1.75			63.7	5.006	1.793	CT	2.553	1.68	52.70			1978	MPC01
		2.75			63.7	5.998	2.726	CT	3.059	1.60	51.00			1978	MPC01
		2.40			63.7	4.965	2.353	CT	2.532	1.22	45.00			1978	MPC01
		2.40			63.7	5.980	2.364	CT	3.050	1.22	44.60			1978	MPC01
		3.00			63.7	4.995	2.484	CT	2.615	0.89	38.09			1978	RA003

TABLE 8.19.2.1 (CONTINUED)

ALUMINUM 7475 K_{Ic}

CONDITION	PRODUCT		TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN			CRACK LENGTH (in.) A	2.5 * (K_{Ic}/TYS)^2 (in.)	K_{Ic}			DATE	REFER
	FORM	THICK (in.)				WIDTH (in.) W	THICK (in.) B	DESIGN			K_{Ic} (Ksi√in.)	K_{Ic} MEAN	STAN DEV		
T7351 Cont'd	Plate Cont'd	2.40	R.T. Cont'd	L-T Cont'd	64.0	4.994	2.365	CT	2.547	1.12	42.90	Cont'd	Cont'd	1978	MPC01
		2.40			64.2	4.978	2.378	CT	2.489	0.93	39.50			1978	MPC01
		1.25			64.5	3.001	1.271	CT	1.549	0.89	38.50			1977	RA006
		2.40			64.7	6.049	2.364	CT	3.085	1.08	42.90			1978	MPC01
		1.75			64.7	4.984	1.795	CT	2.542	1.26	46.40			1978	MPC01
		1.75			64.7	4.982	1.755	CT	2.541	1.44	49.20			1978	MPC01
		2.40			64.7	5.042	2.364	CT	2.521	0.99	40.90			1978	MPC01
		2.25			64.8	2.997	1.499	CT	1.605	1.04	41.80			1977	RA004
		1.75			64.8	4.980	1.746	CT	2.540	1.15	44.50			1978	MPC01
		1.75			65.1	4.977	1.753	CT	2.538	1.19	45.40			1978	MPC01
		1.75			65.2	4.965	1.753	CT	2.532	1.44	50.20			1978	MPC01
		1.75			65.2	4.967	1.758	CT	2.533	1.33	47.80			1978	MPC01
		1.75			65.3	4.975	1.755	CT	2.537	1.36	48.70			1978	MPC01
		1.75			65.6	4.965	1.755	CT	2.532	1.22	46.00			1978	MPC01
		2.40			65.7	5.004	2.378	CT	2.552	1.08	43.80			1978	MPC01
		1.75			66.0	5.000	1.742	CT	2.550	1.15	45.40			1978	MPC01
		1.75			66.0	5.029	1.761	CT	2.565	1.22	46.20			1978	MPC01
		1.75			67.0	4.992	1.750	CT	2.546	1.05	43.80			1978	MPC01

TABLE 8.19.2.1 (CONTINUED)

ALUMINUM 7475 K_{Ic}

CONDITION	PRODUCT FORM	PRODUCT THICK (in.)	TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN WIDTH (in.) W	SPECIMEN THICK (in.) B	SPECIMEN DESIGN	CRACK LENGTH (in.) A	$2.5 * (K_{Ic}/TYS)^2$ (in.)	K_{Ic} K_{Ic} (Ksi√in.)	K_{Ic} K_{Ic} MEAN	K_{Ic} STAN DEV	DATE	REFER
T7351	Plate	4.00	R.T.	T-L	54.6	3.005	1.497	CT	1.574	0.82	31.40	37.2	4.0	1977	RA006
		3.50			55.2	5.014	2.500	CT	2.607	1.22	39.10			1978	MPC01
		3.50			55.8	4.971	2.500	CT	2.585	1.29	40.20			1978	MPC01
		3.50			55.8	4.973	2.498	CT	2.586	1.84	48.30			1978	MPC01
		3.50			55.8	5.041	2.500	CT	2.571	1.33	41.00			1978	MPC01
		3.50			55.9	5.019	2.499	CT	2.610	1.19	38.80			1978	MPC01
		3.00			56.0	5.000	2.499	CT	2.657	0.83	32.40			1978	RA003
		3.50			56.0	5.039	2.500	CT	2.620	1.08	37.10			1978	MPC01
		3.50			56.0	4.985	2.500	CT	2.592	1.02	35.90			1978	MPC01
		3.50			56.3	4.970	2.500	CT	2.634	1.12	37.80			1978	MPC01
		3.00			56.5	4.998	2.494	CT	2.640	0.87	33.50			1978	RA003
		3.50			56.5	5.012	2.500	CT	2.556	1.12	38.20			1978	MPC01
		3.50			56.5	5.000	2.500	CT	2.600	1.12	38.20			1978	MPC01
		3.50			56.6	5.033	2.500	CT	2.617	1.29	41.00			1978	MPC01
		3.00			56.9	4.997	2.497	CT	2.698	0.80	32.20			1978	RA003
		3.50			57.0	5.987	3.000	CT	3.173	1.02	36.80			1978	MPC01
		3.50			57.0	6.047	2.998	CT	3.205	1.05	37.40			1978	MPC01
		3.50			57.0	4.964	2.500	CT	2.631	0.93	35.20			1978	MPC01
		3.50			57.0	6.021	3.001	CT	3.191	1.08	37.70			1978	MPC01
		3.50			57.0	5.979	3.000	CT	3.169	0.99	36.20			1978	MPC01
		3.25			57.1	2.003	1.002	CT	1.017	0.63	28.79			1977	RA006
		3.00			57.1	4.996	2.500	CT	2.656	0.94	35.09			1978	RA003
		3.50			57.1	4.989	2.500	CT	2.594	1.44	43.50			1978	MPC01

TABLE 8.19.2.1 (CONTINUED)

ALUMINUM 7475 K_{Ic}

CONDITION	PRODUCT		TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN			CRACK LENGTH (in.) A	2.5 * (K_{Ic}/TYS)^2 (in.)	K_{Ic}			DATE	REFER
	FORM	THICK (in.)				WIDTH (in.) W	THICK (in.) B	DESIGN			K_{Ic} (Ksi√in.)	K_{Ic} MEAN	STAN DEV		
		3.00			57.2	4.996	2.494	CT	2.623	1.05	37.20			1978	RA003
		3.00			57.2	4.998	2.498	CT	2.653	0.79	32.20			1978	RA003
		3.50			57.4	5.006	2.500	CT	2.603	1.48	44.60			1978	MPC01
		3.00			57.5	4.999	2.496	CT	2.592	0.81	32.80			1978	RA003
		3.54			57.6	2.994	1.499	CT	1.488	1.01	36.70			1977	RA004
		2.75			57.6	6.039	2.756	CT	3.080	1.05	37.50			1978	MPC01
		2.75			57.6	5.036	1.250	CT	2.518	1.02	37.00			1978	MPC01
		2.75			57.6	5.049	1.750	CT	2.575	1.02	37.40			1978	MPC01
		2.75			57.6	6.049	2.755	CT	3.085	1.02	37.40			1978	MPC01
		2.75			57.6	5.052	2.500	CT	2.627	1.05	37.50			1978	MPC01
T7351 Cont'd	Plate Cont'd	3.50	R.T. Cont'd	T-L Cont'd	57.9	4.987	2.500	CT	2.593	1.33	42.50	Cont'd	Cont'd	1978	MPC01
		2.25			58.0	2.998	1.499	CT	1.559	1.14	39.20			1977	RA004
		3.62			58.3	3.002	1.498	CT	1.528	0.76	32.20			1977	RA006
		3.50			58.3	5.017	2.497	CT	2.609	0.96	36.70			1978	MPC01
		2.75			58.7	6.042	2.725	CT	3.142	0.87	35.00			1978	MPC01
		2.75			58.7	6.057	2.744	CT	3.089	0.87	35.00			1978	MPC01
		2.75			58.7	4.971	1.249	CT	2.535	0.93	35.90			1978	MPC01
		3.50			58.7	4.981	2.499	CT	2.590	0.93	36.20			1978	MPC01
		2.75			58.7	4.985	2.500	CT	2.642	0.90	35.50			1978	MPC01
		3.50			58.9	4.966	2.500	CT	2.632	1.80	50.10			1978	MPC01
		2.25			59.0	5.969	2.249	CT	3.104	0.96	36.60			1978	MPC01
		2.25			59.0	6.035	2.257	CT	3.078	0.93	36.50			1978	MPC01

TABLE 8.19.2.1 (CONTINUED)

ALUMINUM 7475 K_{Ic}															
CONDITION	PRODUCT		TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN			CRACK LENGTH (in.) A	2.5 * (K_{Ic}/TYS)^2 (in.)	K_{Ic}			DATE	REFER
	FORM	THICK (in.)				WIDTH (in.) W	THICK (in.) B	DESIGN			K_{Ic} (Ksi√in.)	K_{Ic} MEAN	STAN DEV		
T7351 Cont'd	Plate Cont'd	3.50	R.T. Cont'd	T-L Cont'd	59.1	5.005	2.498	CT	2.608	1.44	45.00	Cont'd	Cont'd	1978	MPC01
		3.75			59.1	5.031	2.501	CT	2.566	0.87	35.20			1978	MPC01
		3.00			59.2	4.999	2.496	CT	2.591	0.80	33.59			1978	RA003
		3.00			59.5	4.983	2.502	CT	2.641	1.05	38.80			1978	MPC01
		3.00			59.6	4.972	2.500	CT	2.635	1.12	40.20			1978	MPC01
		3.00			59.6	4.974	2.502	CT	2.636	1.12	40.20			1978	MPC01
		3.50			59.6	4.977	2.498	CT	2.638	0.90	36.30			1978	MPC01
		3.00			59.7	4.970	2.501	CT	2.534	1.15	40.80			1978	MPC01
		3.25			59.7	3.003	1.499	CT	1.592	0.64	30.40			1977	RA006
		2.25			59.9	2.998	1.499	CT	1.560	1.03	38.59			1977	RA004
		3.00			59.9	5.015	2.498	CT	2.658	0.99	38.20			1978	MPC01
		3.00			60.1	5.026	2.501	CT	2.664	1.05	39.30			1978	MPC01
		3.00			60.1	5.001	2.495	CT	2.552	0.78	33.59			1978	RA003
		3.00			60.1	5.038	2.502	CT	2.670	1.15	41.00			1978	MPC01
		3.50			60.2	5.027	2.500	CT	2.614	1.68	49.50			1978	MPC01
		3.25			60.4	4.977	2.500	CT	2.588	0.81	34.90			1978	MPC01
		2.25			60.4	2.997	1.499	CT	1.648	1.04	39.00			1977	RA004
		1.75			60.4	4.982	1.747	CT	2.541	1.02	39.00			1978	MPC01
		3.00			60.5	4.995	2.498	CT	2.591	0.80	34.40			1980	RA005
		3.00			60.5	4.983	2.502	CT	2.641	1.19	42.20			1978	MPC01
		3.00			60.9	4.998	2.500	CT	2.599	0.62	30.60			1978	MPC01
		2.25			60.9	6.008	2.262	CT	3.064	0.93	37.60			1978	MPC01

TABLE 8.19.2.1 (CONTINUED)

ALUMINUM 7475 K_{Ic}

CONDITION	PRODUCT		TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN			CRACK LENGTH (in.) A	2.5 * (K_{Ic}/TYS)^2 (in.)	K_{Ic}			DATE	REFER
	FORM	THICK (in.)				WIDTH (in.) W	THICK (in.) B	DESIGN			K_{Ic} (Ksi√in.)	K_{Ic} MEAN	STAN DEV		
T7351 Cont'd	Plate Cont'd	2.25	R.T. Cont'd	T-L Cont'd	60.9	6.045	2.260	CT	3.083	0.96	38.10	Cont'd	Cont'd	1978	MPC01
		3.00			60.9	4.992	2.500	CT	2.596	0.65	31.30			1978	MPC01
		3.00			60.9	5.037	2.501	CT	2.619	0.96	37.90			1978	MPC01
		3.00			60.9	5.002	2.500	CT	2.601	0.62	31.00			1978	MPC01
		3.00			61.0	5.032	2.501	CT	2.667	1.19	42.60			1978	MPC01
		3.00			61.0	4.997	2.499	CT	2.626	1.00	38.59			1980	RA005
		3.00			61.0	5.042	2.502	CT	2.622	0.75	33.80			1978	MPC01
		1.75			61.2	6.052	1.760	CT	3.026	0.99	38.60			1978	MPC01
		3.00			61.3	5.036	2.500	CT	2.669	0.93	37.40			1978	MPC01
		3.00			61.3	4.997	2.505	CT	2.610	0.91	37.09			1978	GD006
		3.00			61.3	4.998	2.503	CT	2.620	1.00	38.80			1978	GD006
		3.00			61.3	4.993	2.504	CT	2.626	0.94	37.70			1978	GD006
		3.00			61.4	4.998	2.495	CT	2.562	0.70	32.70			1978	RA003
		1.75			61.5	4.971	1.750	CT	2.535	0.99	39.10			1978	MPC01
		2.75			61.5	4.987	2.501	CT	2.593	1.64	50.00			1978	MPC01
		3.00			61.6	4.989	2.502	CT	2.694	1.19	42.60			1978	MPC01
		3.00			61.8	5.019	2.501	CT	2.710	0.99	39.10			1978	MPC01
		3.00			61.9	5.001	2.491	CT	2.647	0.96	38.50			1978	RA003
		2.50			61.9	4.967	2.499	CT	2.583	0.70	33.10			1978	MPC01
		2.75			61.9	4.968	2.500	CT	2.633	0.81	35.60			1978	MPC01
		1.75			62.0	5.996	1.752	CT	3.058	1.02	39.70			1978	MPC01
		1.75			62.0	5.965	1.755	CT	3.042	1.02	40.20			1978	MPC01

TABLE 8.19.2.1 (CONTINUED)

ALUMINUM 7475 K_{Ic}																
CONDITION	PRODUCT		TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN			CRACK LENGTH (in.) A	2.5 * (K_Q/TYS)^2 (in.)	K_{Ic}			DATE	REFER
	FORM	THICK (in.)				WIDTH (in.) W	THICK (in.) B	DESIGN			K_Q (Ksi√in.)	K_Q MEAN	STAN DEV		
		3.00			62.1	5.039	2.500	CT	2.620	0.78	34.80			1978	MPC01
		2.50			62.1	3.004	1.496	CT	1.587	0.71	33.09			1977	RA006
		3.00			62.3	5.000	2.500	CT	2.682	0.81	35.59			1978	RA003
		3.00			62.3	4.997	2.498	CT	2.647	0.90	37.50			1978	RA003
		2.50			62.3	4.964	2.500	CT	2.581	0.78	35.10			1978	MPC01
		3.00			62.6	4.998	2.500	CT	2.649	0.84	36.40			1978	MPC01
		2.37			62.6	4.971	2.363	CT	2.585	0.93	38.50			1978	MPC01
		3.00			62.7	4.999	2.490	CT	2.571	0.70	33.30			1978	RA003
		2.00			62.9	5.031	1.974	CT	2.566	0.87	37.30			1978	MPC01
T7351 Cont'd	Plate Cont'd	2.50	R.T. Cont'd	T-L Cont'd	62.9	5.012	2.500	CT	2.606	0.75	34.90			1978	MPC01
		2.40			63.2	6.043	2.365	CT	3.082	0.81	36.60	Cont'd	Cont'd	1978	MPC01
		2.00			63.2	3.004	1.498	CT	1.586	0.65	32.30			1977	RA006
		2.00			63.2	5.031	1.972	CT	2.566	0.87	37.30			1978	MPC01
		1.25			63.6	3.002	1.270	CT	1.506	0.61	31.60			1977	RA006
		2.00			63.6	5.041	1.996	CT	2.571	0.70	33.90			1978	MPC01
		3.00			64.5	4.998	2.489	CT	2.611	0.68	33.80			1978	RA003
		1.75			65.2	5.018	1.738	CT	2.559	0.81	37.60			1978	MPC01
		1.77			66.0	2.997	1.498	CT	1.509	0.58	31.79			1977	RA004
		1.77			66.0	2.997	1.497	CT	1.556	0.60	32.59			1977	RA004
		1.75			66.3	5.041	1.760	CT	2.571	0.75	37.00			1978	MPC01

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TABLE 8.19.2.1 (CONTINUED)

ALUMINUM 7475 K_{Ic}

CONDITION	PRODUCT FORM	PRODUCT THICK (in.)	TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN WIDTH (in.) W	SPECIMEN THICK (in.) B	SPECIMEN DESIGN	CRACK LENGTH (in.) A	$2.5 \cdot (K_{Ic}/TYS)^2$ (in.)	K_{Ic} K_{Ic} (Ksi√in.)	K_{Ic} K_{Ic} MEAN	K_{Ic} STAN DEV	DATE	REFER
		1.25			---	1.003	0.501	CT	0.526	---	28.10			1977	RA006
		3.00			53.3	2.003	0.999	CT	1.067	0.79	30.10			1978	RA003
		3.50			53.9	2.000	1.000	CT	1.020	0.96	33.70			1978	MPC01
		3.50			53.9	2.010	1.000	CT	1.005	0.93	33.40			1978	MPC01
		3.50			54.2	2.528	1.251	CT	1.264	0.84	31.70			1978	MPC01
		3.50			54.2	2.480	1.250	CT	1.265	0.87	32.20			1978	MPC01
		2.75			54.3	2.014	1.000	CT	1.007	0.87	32.10			1978	MPC01
		3.00			54.3	2.003	0.999	CT	1.050	0.87	32.20			1978	RA003
		3.00			54.3	2.010	0.999	CT	1.005	0.96	33.70			1978	MPC01
		2.75			54.3	1.994	1.001	CT	1.017	0.81	31.30			1978	MPC01
		3.50			54.4	2.516	1.250	CT	1.258	0.93	33.50			1978	MPC01
T7351	Plate	3.50	R.T.	S-L	54.4	2.510	1.249	CT	1.255	0.87	32.50	30.6	2.7	1978	MPC01
		3.50			54.4	2.014	1.000	CT	1.007	0.87	32.40			1978	MPC01
		3.00			54.5	1.986	1.001	CT	1.013	0.90	32.90			1978	MPC01
		3.00			54.6	2.003	1.000	CT	1.046	0.69	28.79			1978	RA003
		3.00			54.7	1.999	1.000	CT	0.967	0.79	30.79			1978	RA003
		4.00			54.9	3.002	1.498	CT	1.566	0.71	29.40			1977	RA006
		3.00			55.0	2.008	0.999	CT	1.004	0.90	33.50			1978	MPC01
		3.00			55.0	2.006	1.001	CT	1.003	0.87	32.70			1978	MPC01
		2.75			55.3	2.018	1.000	CT	1.009	0.99	35.00			1978	MPC01
		2.75			55.3	1.992	1.000	CT	1.016	0.99	34.90			1978	MPC01
		2.50			55.7	1.999	1.002	CT	1.024	0.67	28.90			1977	RA006
		3.00			55.8	1.990	1.001	CT	1.015	0.81	31.90			1978	MPC01

TABLE 8.19.2.1 (CONTINUED)

ALUMINUM 7475 K_{Ic}

CONDITION	PRODUCT FORM	PRODUCT THICK (in.)	TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN WIDTH (in.) W	SPECIMEN THICK (in.) B	SPECIMEN DESIGN	CRACK LENGTH (in.) A	$2.5 * (K_{Ic}/TYS)^2$ (in.)	K_{Ic} K_{Ic} (Ksi√in.)	K_{Ic} K_{Ic} MEAN	K_{Ic} STAN DEV	DATE	REFER
T7351 Cont'd	Plate Cont'd	3.62	R.T. Cont'd	S-L Cont'd	55.8	2.002	0.999	CT	0.984	0.67	29.10	Cont'd	Cont'd	1977	RA006
		3.00			56.0	2.006	1.001	CT	1.003	0.78	31.80			1978	MPC01
		3.25			56.0	1.998	1.002	CT	0.947	0.53	25.90			1977	RA006
		3.50			56.2	1.992	1.000	CT	1.015	0.84	32.70			1978	MPC01
		3.50			56.2	2.000	1.000	CT	1.020	0.81	32.50			1978	MPC01
		3.00			56.4	2.000	1.000	CT	1.000	0.87	33.70			1978	MPC01
		3.00			56.6	2.010	0.999	CT	1.005	0.84	32.90			1978	MPC01
		3.00			56.7	1.999	1.006	CT	1.001	0.53	26.20			1978	RA003
		3.00			56.8	1.998	0.999	CT	1.009	0.59	27.70			1978	RA003
		3.54			56.9	2.000	0.998	CT	0.982	0.69	30.00			1977	RA004
		3.54			56.9	2.000	0.999	CT	0.963	0.71	30.40			1977	RA004
		3.00			57.0	1.996	0.998	CT	1.025	0.63	28.79			1978	RA003
		3.00			57.2	2.006	1.001	CT	1.003	0.78	32.60			1978	MPC01
		3.00			57.2	2.000	0.998	CT	0.965	0.59	28.00			1978	RA003
		3.00			57.2	1.996	1.001	CT	0.998	0.75	32.00			1978	MPC01
		3.00			57.3	1.001	1.001	CT	1.074	0.67	29.70			1978	RA003
		3.00			57.3	2.000	0.998	CT	0.988	0.61	28.40			1980	RA005
		3.00			57.4	2.001	1.000	CT	1.033	0.87	33.90			1978	GD006
		3.00			57.4	1.999	0.999	CT	1.053	0.87	34.00			1978	GD006
		3.50			57.4	2.010	1.000	CT	1.005	0.75	31.80			1978	MPC01
		3.00			57.4	2.002	1.000	CT	1.039	0.99	36.30			1978	GD006
		3.00			57.6	2.000	1.008	CT	1.043	0.50	25.79			1978	RA003

TABLE 8.19.2.1 (CONTINUED)

ALUMINUM 7475 K_{Ic}

CONDITION	PRODUCT		TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN			CRACK LENGTH (in.) A	2.5 * (K_{Ic}/TYS)^2 (in.)	K_{Ic}			DATE	REFER
	FORM	THICK (in.)				WIDTH (in.) W	THICK (in.) B	DESIGN			K_{Ic} (Ksi√in.)	K_{Ic} MEAN	STAN DEV		
T7351 Cont'd	Plate Cont'd	3.00	R.T. Cont'd	S-L Cont'd	57.6	1.990	1.000	CT	0.995	0.70	31.00	Cont'd	Cont'd	1978	MPC01
		3.00			57.7	1.999	0.999	CT	0.967	0.67	30.00			1978	RA003
		3.00			57.9	1.999	1.005	CT	1.032	0.55	27.29			1978	RA003
		3.00			58.0	1.992	1.000	CT	1.016	0.57	28.00			1978	MPC01
		1.77			58.1	1.498	0.747	CT	0.771	0.48	25.50			1977	RA004
		3.00			58.1	2.000	1.000	CT	1.056	0.67	30.29			1978	RA003
		1.77			58.1	1.498	0.746	CT	0.766	0.47	25.20			1977	RA004
		3.00			58.6	1.999	0.999	CT	0.975	0.58	28.29			1978	RA003
		3.00			59.4	2.000	1.007	CT	1.027	0.61	29.50			1978	RA003
		3.00			59.7	2.001	1.000	CT	1.075	0.59	29.10			1978	RA003
		3.00			59.9	2.000	0.998	CT	0.985	0.54	28.00			1980	RA005
		3.00			60.0	2.001	1.001	CT	1.055	0.47	26.20			1978	RA003
		2.50			60.7	1.999	1.001	CT	1.013	0.61	30.00			1977	RA006
		3.00			60.8	2.001	1.000	CT	1.053	0.58	29.29			1978	RA003
		2.00			63.2	1.503	0.750	CT	0.790	0.51	28.70			1977	RA006
T7351	Plate	1.62	83	T-L	65.2	1.490	0.750	CT	0.728	0.64	33.00	32.5	0.4	1973	86213
		1.62			65.8	1.490	0.750	CT	0.730	0.61	32.40			1973	86213
		1.62			65.8	1.490	0.749	CT	0.727	0.60	32.20			1973	86213
T7351	Plate	1.62	83	S-L	60.6	1.000	0.500	CT	0.484	0.43	25.00	25.4	0.5	1973	86213
		1.62			60.9	1.000	0.499	CT	0.487	0.45	25.70			1973	86213
T7351 (SP)	Plate	1.75	R.T.	L-T	59.9	4.000	1.798	CT	2.195	1.63	48.30	---	---	1973	86213

TABLE 8.19.2.1 (CONTINUED)

ALUMINUM 7475 K_{Ic}

CONDITION	PRODUCT FORM	PRODUCT THICK (in.)	TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN WIDTH (in.) W	SPECIMEN THICK (in.) B	SPECIMEN DESIGN	CRACK LENGTH (in.) A	$2.5 \cdot (K_{Ic}/TYS)^2$ (in.)	K_{Ic} (Ksi√in.)	K_{Ic} MEAN	STAN DEV	DATE	REFER
T7351 (SP)	Plate	3.25	R.T.	T-L	54.2	4.000	2.002	CT	2.177	1.40	40.50	37.6	2.5	1973	86213
		3.25			54.2	4.000	2.001	CT	2.156	1.34	39.70			1973	86213
		3.25			56.2	3.990	2.001	CT	2.152	1.12	37.60			1973	86213
		3.25			56.2	6.000	1.999	CT	3.161	1.16	38.20			1973	86213
		3.25			56.2	4.000	2.000	CT	2.187	1.08	37.00			1973	86213
		3.25			56.7	4.000	2.000	CT	2.197	1.12	37.90			1973	86213
		3.25			56.7	6.000	2.000	CT	3.216	1.08	37.20			1973	86213
		2.50			57.4	2.500	1.252	CT	1.329	1.06	37.40			1973	86213
		2.50			57.4	2.500	1.251	CT	1.296	1.10	38.10			1973	86213
		2.50			57.6	2.500	1.249	CT	1.312	1.24	40.50			1973	86213
		2.50			57.6	2.500	1.251	CT	1.294	1.09	38.10			1973	86213
		3.00			58.0	6.010	2.000	CT	3.176	0.99	36.50			1973	86213
		3.00			60.3	6.000	2.003	CT	3.221	1.16	41.10			1973	86213
		2.50			60.4	1.490	0.752	CT	0.736	0.71	32.10			1973	86213
		2.50			60.6	1.490	0.748	CT	0.756	0.69	31.80			1973	86213
		1.75			60.9	4.000	1.796	CT	2.188	0.94	37.30			1973	86213
		1.75			60.9	4.000	1.796	CT	2.160	0.96	37.70			1973	86213
T7351 (SP)	Plate	3.25	82	S-L	54.7	1.990	1.002	CT	0.982	0.86	32.00	31.9	1.7	1973	86213
		3.25			54.7	2.000	1.002	CT	1.004	0.93	33.40			1973	86213
		3.25			55.0	1.990	1.002	CT	1.006	0.88	32.60			1973	86213
		3.25			55.0	1.990	1.001	CT	1.011	0.77	30.60			1973	86213

TABLE 8.19.2.1 (CONTINUED)

ALUMINUM 7475 K_{Ic}

CONDITION	PRODUCT FORM	PRODUCT THICK (in.)	TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN WIDTH (in.) W	SPECIMEN THICK (in.) B	SPECIMEN DESIGN	CRACK LENGTH (in.) A	$2.5 * (K_{Ic}/TYS)^2$ (in.)	K_{Ic} K_{Ic} (Ksi√in.)	K_{Ic} K_{Ic} MEAN	K_{Ic} STAN DEV	DATE	REFER
T7351 (SP) Cont'd	Plate Cont'd	3.00	82 Cont'd	S-L Cont'd	55.8	1.990	1.001	CT	0.985	0.74	30.30	Cont'd	Cont'd	1973	86213
		3.00			55.8	1.990	1.002	CT	0.976	0.72	30.00			1973	86213
		3.00			57.0	1.990	1.003	CT	0.979	0.76	31.50			1973	86213
		3.00			57.0	1.990	1.003	CT	0.992	0.94	35.00			1973	86213
T736	Forging	2.00	82	S-T	68.9	2.000	0.999	CT	1.053	0.72	37.10	---	---	1973	86213
T7651	Plate	1.75	-65	L-T	72.7	3.000	1.488	CT	1.546	0.89	43.30	39.3	3.7	1987	DA005
		1.75			72.7	3.001	1.489	CT	1.534	0.80	41.10			1987	DA005
		1.75			73.1	3.011	1.599	CT	1.545	0.56	34.72			1987	DA004
		1.75			73.1	3.008	1.499	CT	1.564	0.67	37.95			1987	DA004
T7651	Plate	2.00	R.T.	L-T	60.8	2.998	1.500	CT	1.581	1.25	43.00	42.1	3.7	1977	RA007
		2.00			61.7	3.001	1.498	CT	1.612	1.19	42.70			1977	RA007
		2.00			62.0	3.000	1.497	CT	1.547	1.06	40.40			1977	RA007
		2.00			67.6	3.000	1.498	CT	1.609	0.89	40.40			1977	RA001
		1.75			68.3	3.011	1.505	CT	1.545	0.91	41.19			1987	DA004
		1.75			68.3	3.012	1.504	CT	1.577	0.94	41.86			1987	DA004
		2.00			68.7	3.000	1.498	CT	1.575	0.68	35.90			1977	RA007
		1.75			69.3	3.001	1.488	CT	1.553	1.25	49.10			1987	DA005
		1.75			69.3	3.004	1.488	CT	1.584	1.21	48.20			1987	DA005
		1.00			71.0	2.490	0.950	CT	1.297	0.80	40.30			1973	86574
		1.00			71.0	2.490	0.950	CT	1.268	0.80	40.10			1973	86574

TABLE 8.19.2.1 (CONTINUED)

ALUMINUM 7475 K_{Ic}

CONDITION	PRODUCT FORM	PRODUCT THICK (in.)	TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN WIDTH (in.) W	SPECIMEN THICK (in.) B	SPECIMEN DESIGN	CRACK LENGTH (in.) A	$2.5 * (K_{Ic}/TYS)^2$ (in.)	K_{Ic} K_{Ic} (Ksi√in.)	K_{Ic} K_{Ic} MEAN	K_{Ic} STAN DEV	DATE	REFER
T7651	Plate	2.00	R.T.	T-L	62.3	2.998	1.500	CT	1.512	0.78	34.90	34.0	2.9	1977	RA007
		2.00			63.7	3.001	1.498	CT	1.576	0.71	34.00			1977	RA007
		2.00			64.7	3.000	1.499	CT	1.564	0.69	34.09			1977	RA007
		2.00			67.7	3.000	1.499	CT	1.582	0.63	34.09			1977	RA007
		0.87			69.5	3.000	0.892	CT	1.523	0.50	31.00			1973	86213
		2.00			69.8	3.000	1.498	CT	1.612	0.43	29.10			1977	RA007
		1.00			70.2	2.000	0.965	CT	0.991	0.71	37.40			1973	86213
		1.00			70.2	2.000	0.965	CT	1.048	0.72	37.70			1973	86213
T7651	Plate	2.00	R.T.	S-L	60.5	1.499	0.749	CT	0.770	0.50	27.29	27.6	0.8	1977	RA007
		2.00			60.9	1.498	0.750	CT	0.775	0.51	27.60			1977	RA007
		2.00			61.1	1.499	0.750	CT	0.766	0.48	27.00			1977	RA007
		2.00			65.7	1.499	0.752	CT	0.802	0.42	27.00			1977	RA007
		2.00			66.1	1.500	0.749	CT	0.798	0.47	28.90			1977	RA007
T7651 (SP)	Plate	1.75	R.T.	L-T	64.2	4.000	1.789	CT	2.208	1.27	45.80	42.4	2.9	1973	86213
		2.00			66.0	3.990	2.016	CT	2.109	0.95	40.60			1973	86213
		2.00			66.0	4.000	2.017	CT	2.096	0.96	40.90			1973	86213
T7651 (SP)	Plate	2.00	R.T.	T-L	66.4	3.000	0.998	CT	1.499	0.70	35.20	35.7	0.4	1973	86213
		2.00			66.7	4.000	2.018	CT	2.093	0.72	35.80			1973	86213
		2.00			66.7	4.000	2.017	CT	2.105	0.73	36.00			1973	86213

TABLE 8.19.2.1 (CONCLUDED)

ALUMINUM 7475 K_{Ic}

CONDITION	PRODUCT		TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN			CRACK LENGTH (in.) A	2.5 * $(K_{Ic}/TYS)^2$ (in.)	K_{Ic}			DATE	REFER
	FORM	THICK (in.)				WIDTH (in.) W	THICK (in.) B	DESIGN			K_{Ic} (Ksi√in.)	K_{Ic} MEAN	STAN DEV		
T7651 (SP)	Plate	2.00	R.T.	S-T	60.2	1.500	0.748	CT	0.793	0.63	30.30	28.8	1.1	1973	86213
		2.00			61.0	1.500	0.748	CT	0.776	0.56	28.90			1973	86213
		2.00			62.3	1.490	0.748	CT	0.765	0.50	27.80			1973	86213
		2.00			62.4	1.490	0.748	CT	0.759	0.49	27.70			1973	86213
		2.00			63.4	1.500	0.748	CT	0.787	0.54	29.40			1973	86213
T7651 (SP)	Plate	2.00	R.T.	S-L	60.2	1.500	0.747	CT	0.779	0.60	29.60	27.3	2.1	1973	86213
		2.00			61.0	1.500	0.746	CT	0.765	0.48	26.60			1973	86213
		2.00			61.5	1.500	0.747	CT	0.746	0.41	24.90			1973	86213
		2.00			62.3	1.500	0.747	CT	0.744	0.54	28.90			1973	86213
		2.00			62.4	1.500	0.747	CT	0.755	0.40	25.10			1973	86213
		2.00			63.4	1.500	0.747	CT	0.756	0.52	28.80			1973	86213
T7651 (SP)	Plate	1.75	82	S-L	61.6	1.000	0.500	CT	0.492	0.37	23.70	27.4	3.2	1973	86213
		2.00			63.8	1.490	0.749	CT	0.752	0.54	29.60			1973	86213
		2.00			63.8	1.490	0.749	CT	0.756	0.51	28.90			1973	86213

TABLE 8.19.2.2

ALUMINUM 7475 K_C

CONDITION HEAT TREAT	PRODUCT FORM	PRODUCT THICK (in.)	TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN WIDTH (in.) W	SPECIMEN THICK (in.) B	CRACK LENGTH INIT (in.) $2a_o$	CRACK LENGTH FINAL (in.) $2a_f$	GROSS STRESS ONSET (Ksi) σ_o	GROSS STRESS MAX (Ksi) σ_{Max}	K_{app} (Ksi√in)	K_{app} MEAN	K_{app} STAN DEV	K_c (Ksi√in)	K_c MEAN	K_c STAN DEV	DATE	REFER
BUCKLING OF CRACK EDGES NOT RESTRAINED																			
T61	Sheet	0.09	R.T.	L-T	76.0	3.000	0.090	1.027	2.111	---	48.00	65.74*	---	---	130.37*	---	---	1973	86213
		0.09			76.0	3.000	0.090	1.280	2.237	---	41.30	66.15*			124.03*			1973	86213
T61	Sheet	0.12	R.T.	L-T	78.4	3.000	0.127	1.177	2.252	---	41.30	62.13*	---	---	125.72*	---	---	1973	86213
		0.12			78.4	3.000	0.127	1.117	2.146	---	43.10	62.48*			120.34*			1973	86213
T61	Sheet	0.04	R.T.	L-T	77.1	16.000	0.039	4.000	4.340	---	29.20	76.15	77.5	1.8	79.90	80.9	1.4	1973	86842
		0.04			76.2	16.000	0.040	4.000	4.280	---	30.20	78.76			81.95			1973	86842
T61	Sheet	0.06	R.T.	L-T	75.7	16.000	0.062	4.000	4.280	---	30.50	79.54	84.1	3.9	82.76	89.4	5.1	1972	84368
		0.06			74.1	16.000	0.063	6.000	6.600	---	23.60	79.46			85.10			1972	84368
		0.06			74.1	16.000	0.063	3.000	3.460	---	39.80	88.32			95.56			1972	84368
		0.06			74.1	16.000	0.063	2.000	2.320	---	49.00	87.70			94.77			1972	84368
		0.06			74.1	16.000	0.063	5.000	5.400	---	28.40	84.75			89.05			1972	84368
		0.06			74.1	16.000	0.063	1.000	1.520	---	61.90	77.77*			96.18*			1972	84368
		0.06			74.1	16.000	0.063	4.000	4.320	---	32.60	85.02			88.95			1972	84368
T61	Sheet	0.09	R.T.	L-T	73.7	16.000	0.089	4.000	4.620	23.90	38.30	99.88	99.8	0.7	108.82	112.1	3.2	1973	86842
		0.09			76.4	15.880	0.090	3.980	4.700	---	38.70	100.69			111.22			1973	86213
		0.09			76.4	15.880	0.090	4.000	4.850	---	38.20	99.68			111.95			1973	86213
		0.09			74.2	16.000	0.091	4.000	5.220	---	38.00	99.10			116.56			1973	86842
T61	Sheet	0.09	R.T.	L-T	75.8	15.880	0.100	4.000	4.300	---	32.90	85.85	83.0	4.1	89.59	87.2	3.4	1973	86213
		0.09			75.8	15.880	0.100	4.000	4.400	---	30.70	80.11			84.76			1973	86213

* NOTE: NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STANDARD DEVIATION.

TABLE 8.19.2.2 (CONTINUED)

ALUMINUM 7475 K_C																			
CONDITION HEAT TREAT	PRODUCT		TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN		CRACK LENGTH		GROSS STRESS		K_{app}			K_C			DATE	REFER
	FORM	THICK (in.)				WIDTH (in.) W	THICK (in.) B	INIT (in.) $2a_o$	FINAL (in.) $2a_f$	ONSET (Ksi) σ_o	MAX (Ksi) σ_{Max}	K_{app} (Ksi$\sqrt{in}$)	K_{app} MEAN	STAN DEV	K_c (Ksi$\sqrt{in}$)	K_c MEAN	STAN DEV		
BUCKLING OF CRACK EDGES NOT RESTRAINED																			
T61	Sheet	0.12	R.T.	L-T	74.5	16.000	0.110	4.000	4.780	18.20	38.60	100.66	---	---	112.00	---	---	1973	86842
T61	Sheet	0.12	R.T.	L-T	76.8	16.000	0.125	4.000	4.900	20.00	36.20	94.40	---	---	106.67	---	---	1973	86842
T61	Sheet	0.18	R.T.	L-T	75.0	16.000	0.182	4.000	5.400	---	36.70	95.71	90.8	7.0	115.08	106.6	12.0	1973	86842
		0.18			75.6	16.000	0.186	4.000	5.000	---	32.90	85.80			98.18			1973	86842
T61	Plate	0.25	R.T.	L-T	74.8	3.000	0.242	1.160	2.082	---	39.90	59.44*	---	---	106.12*	---	---	1973	86213
		0.25			74.8	3.000	0.242	1.190	2.206	---	39.70	60.23*			116.29*			1973	86213
T61	Sheet	0.18	82	L-T	77.3	3.000	0.178	1.190	2.202	---	43.40	65.84*	---	---	126.71*	---	---	1973	86213
		0.18			77.3	3.000	0.178	1.110	2.111	---	45.70	66.01*			124.12*			1973	86213
T61	Plate	0.25	82	L-T	77.0	3.000	0.250	1.210	2.046	---	28.10	43.15	45.4	3.2	72.79*	---	---	1973	86213
		0.25			77.0	3.000	0.250	1.193	2.231	---	31.40	47.70			93.82*			1973	86213
T61	Sheet	0.06	84	L-T	75.6	16.000	0.063	3.000	3.560	26.80	34.20	75.89	---	---	83.44	---	---	1973	86213
T61	Sheet	0.09	85	L-T	75.9	3.000	0.089	1.220	2.093	---	41.10	63.50*	---	---	110.12*	---	---	1973	86213
		0.09			75.9	3.000	0.089	1.235	2.070	---	40.60	63.26*			107.02*			1973	86213
		0.09			76.4	3.000	0.091	1.160	1.915	---	44.70	66.59*			105.62*			1973	86213
		0.09			76.4	3.000	0.091	1.145	2.006	---	44.90	66.23*			113.02*			1973	86213
T61	Sheet	0.09	85	L-T	75.8	3.000	0.101	1.185	2.030	---	40.10	60.62*	---	---	102.68*	---	---	1973	86213
		0.09			75.8	3.000	0.101	1.190	2.072	---	39.40	59.78*			104.01*			1973	86213
T61	Sheet	0.12	86	L-T	73.4	3.000	0.115	1.172	1.955	---	41.60	62.42*	---	---	101.00*	---	---	1973	86213
		0.12			73.4	3.000	0.115	1.208	2.012	---	40.60	62.27*			102.63*			1973	86213

* NOTE: NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STANDARD DEVIATION.

TABLE 8.19.2.2 (CONTINUED)

ALUMINUM 7475 K_C

CONDITION HEAT TREAT	PRODUCT FORM	PRODUCT THICK (in.)	TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN WIDTH (in.) W	SPECIMEN THICK (in.) B	CRACK LENGTH INIT (in.) $2a_o$	CRACK LENGTH FINAL (in.) $2a_f$	GROSS STRESS ONSET (Ksi) σ_o	GROSS STRESS MAX (Ksi) σ_{Max}	K_{app} $(Ksi\sqrt{in})$	K_{app} MEAN	K_{app} STAN DEV	K_c $(Ksi\sqrt{in})$	K_c MEAN	K_c STAN DEV	DATE	REFER
BUCKLING OF CRACK EDGES NOT RESTRAINED																			
T61	Sheet	0.18	86	L-T	76.5	3.000	0.186	1.160	2.053	---	39.70	59.14*	---	---	103.28*	---	---	1973	86213
		0.18			76.5	3.000	0.186	1.153	2.081	---	39.70	58.85*			105.43*			1973	86213
T61	Sheet	0.06	88	L-T	75.6	16.000	0.062	6.000	6.920	13.30	21.70	73.06	72.9	6.1	81.11	78.6	6.9	1973	86213
		0.06			75.6	16.000	0.063	4.000	4.410	15.90	25.60	66.76			70.72			1973	86213
		0.06			75.6	16.000	0.063	1.000	1.380	41.70	61.50	77.26*			90.96*			1973	86213
		0.06			75.6	16.000	0.063	4.000	4.420	18.70	30.30	79.02			83.82			1973	86213
T61	Sheet	0.09	R.T.	T-L	72.5	3.000	0.090	1.157	2.147	---	43.50	64.64*	---	---	121.46*	---	---	1973	86213
		0.09			72.5	3.000	0.090	1.113	2.116	---	44.60	64.50*			121.68*			1973	86213
T61	Sheet	0.12	R.T.	T-L	73.6	3.000	0.127	1.180	2.124	---	37.40	56.40*	---	---	102.67*	---	---	1973	86213
		0.12			73.6	3.000	0.127	1.137	2.122	---	40.10	58.86*			109.91*			1973	86213
T61	Sheet	0.18	R.T.	T-L	74.2	3.000	0.181	1.223	2.164	---	42.10	65.12*	---	---	119.22*	---	---	1973	86213
		0.18			74.2	3.000	0.182	1.150	2.234	---	43.70	64.70*			131.02*			1973	86213
T61	Sheet	0.04	R.T.	T-L	72.9	16.000	0.040	4.000	4.520	---	30.30	79.02	80.8	2.6	84.96	86.0	1.4	1973	86842
		0.04			72.1	16.000	0.042	4.000	4.360	---	31.70	82.67			86.97			1973	86842
T61	Sheet	0.06	R.T.	T-L	73.8	16.000	0.062	4.000	4.380	---	29.30	76.41	80.4	3.9	80.61	85.8	4.8	1972	84368
		0.06			72.6	16.000	0.063	3.000	3.600	---	38.10	84.55			93.54			1972	84368
		0.06			72.6	16.000	0.063	2.000	2.050	---	45.90	82.15			83.21			1972	84368
		0.06			72.6	16.000	0.063	6.000	6.800	---	22.20	74.74			81.87			1972	84368
		0.06			72.6	16.000	0.063	5.000	5.480	---	27.80	82.96			88.02			1972	84368

* NOTE: NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STANDARD DEVIATION.

TABLE 8.19.2.2 (CONTINUED)

ALUMINUM 7475 K_C

CONDITION HEAT TREAT	PRODUCT FORM	PRODUCT THICK (in.)	TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN WIDTH (in.) W	SPECIMEN THICK (in.) B	CRACK LENGTH INIT (in.) $2a_o$	CRACK LENGTH FINAL (in.) $2a_f$	GROSS STRESS ONSET (Ksi) σ_o	GROSS STRESS MAX (Ksi) σ_{Max}	K_{app} $(Ksi\sqrt{in})$	K_{app} MEAN	K_{app} STAN DEV	K_c $(Ksi\sqrt{in})$	K_c MEAN	K_c STAN DEV	DATE	REFER
BUCKLING OF CRACK EDGES NOT RESTRAINED																			
T61 Cont'd	Sheet Cont'd	0.06	R.T. Cont'd	T-L Cont'd	72.6	16.000	0.063	1.000	1.640	---	60.70	76.26*	Cont'd	Cont'd	98.06*	Cont'd	Cont'd	1972	84368
		0.06			72.6	16.000	0.063	4.000	4.520	---	31.20	81.36			87.48			1972	84368
T61	Sheet	0.09	R.T.	T-L	71.9	16.000	0.090	4.000	5.120	---	36.80	95.97	90.6	4.2	111.48	100.9	7.5	1973	86842
		0.09			73.1	15.880	0.091	3.980	4.750	---	33.00	85.86			95.46			1973	86213
		0.09			73.1	15.880	0.091	3.980	4.320	---	35.10	91.32			95.84			1973	86213
		0.09			72.1	16.000	0.091	4.000	4.880	---	34.30	89.45			100.81			1973	86842
T61	Sheet	0.09	R.T.	T-L	74.1	15.880	0.100	4.000	4.300	---	29.30	76.46	79.7	4.6	79.79	83.5	5.2	1973	86213
		0.09			74.1	15.880	0.101	4.000	4.350	---	31.80	82.98			87.19			1973	86213
T61	Sheet	0.12	R.T.	T-L	72.6	16.000	0.110	4.000	5.360	19.30	35.60	92.84	---	---	111.09	---	---	1973	86842
T61	Sheet	0.12	R.T.	T-L	73.1	16.000	0.126	4.000	4.600	18.80	29.70	77.45	---	---	84.17	---	---	1973	86842
T61	Sheet	0.18	R.T.	T-L	72.3	16.000	0.181	4.000	5.000	---	30.90	80.58	76.4	5.9	92.21	86.8	7.7	1973	86842
		0.18			72.6	16.000	0.186	4.000	4.870	---	27.70	72.24			81.31			1973	86842
T61	Plate	0.25	R.T.	T-L	75.2	3.000	0.250	1.140	1.863	---	27.90	41.05	40.9	0.2	63.69*	---	---	1973	86213
		0.25			75.2	3.000	0.250	1.130	1.592	---	27.90	40.80			53.81			1973	86213
T61	Plate	0.25	82	T-L	72.4	3.000	0.243	1.243	2.152	---	37.50	58.71*	---	---	105.20*	---	---	1973	86213
		0.25			72.4	3.000	0.243	1.220	2.113	---	37.10	57.32*			100.91*			1973	86213
T61	Sheet	0.06	84	T-L	71.6	16.000	0.063	1.000	1.530	44.20	58.60	73.62*	---	---	91.36*	---	---	1973	86213
		0.06			71.6	16.000	0.064	3.000	3.480	25.40	36.50	81.00			87.92			1973	86213

* NOTE: NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STANDARD DEVIATION.

TABLE 8.19.2.2 (CONTINUED)

ALUMINUM 7475 K_C

CONDITION HEAT TREAT	PRODUCT		TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN		CRACK LENGTH		GROSS STRESS		K_{app}			K_C			DATE	REFER
	FORM	THICK (in.)				WIDTH (in.) W	THICK (in.) B	INIT (in.) $2a_o$	FINAL (in.) $2a_f$	ONSET (Ksi) σ_o	MAX (Ksi) σ_{Max}	K_{app} (Ksi√in)	K_{app} MEAN	STAN DEV	K_C (Ksi√in)	K_C MEAN	STAN DEV		
BUCKLING OF CRACK EDGES NOT RESTRAINED																			
T61	Sheet	0.09	85	T-L	74.5	3.000	0.089	1.165	2.029	---	40.40	60.33*	---	---	103.30*	---	---	1973	86213
		0.09			74.5	3.000	0.089	1.150	2.020	---	43.10	63.81*			109.57*			1973	86213
		0.09			73.1	3.000	0.091	1.145	1.880	---	44.30	65.34*			102.34*			1973	86213
		0.09			73.1	3.000	0.091	1.160	1.932	---	44.00	65.54*			105.24*			1973	86213
T61	Sheet	0.09	85	T-L	74.1	3.000	0.101	1.180	1.956	---	40.40	60.92*	---	---	98.22*	---	---	1973	86213
		0.09			74.1	3.000	0.101	1.220	2.064	---	40.30	62.26*			105.76*			1973	86213
T61	Sheet	0.12	86	T-L	71.8	3.000	0.115	1.157	1.967	---	40.10	59.59*	---	---	98.16*	---	---	1973	86213
		0.12			71.8	3.000	0.115	1.133	1.919	---	41.40	60.62*			98.09*			1973	86213
T61	Sheet	0.18	86	T-L	73.5	3.000	0.186	1.162	2.018	---	38.30	57.12*	---	---	97.23*	---	---	1973	86213
		0.18			73.5	3.000	0.186	1.168	2.117	---	38.10	57.03*			103.95*			1973	86213
T61	Sheet	0.06	88	T-L	71.6	16.000	0.062	4.000	4.510	17.60	31.20	81.36	79.9	5.6	87.36	85.0	6.7	1973	86213
		0.06			71.6	16.000	0.062	4.000	4.440	15.50	32.50	84.75			90.15			1973	86213
		0.06			71.6	16.000	0.063	6.000	6.430	10.10	21.90	73.73			77.46			1973	86213
T7351	Plate	3.00	R.T.	L-S	59.5	2.009	0.303	0.744	---	---	44.57	52.80*	---	---	87.20*	---	---	1979	GD011
		3.00			59.5	2.009	0.303	0.750	---	---	43.20	51.40*			85.10*			1979	GD011
		3.00			59.5	2.009	0.303	0.750	---	---	39.10	46.50*			80.10*			1979	GD011
T7351	Plate	0.50	-80	L-T	64.9	16.000	0.266	4.000	---	---	36.89	96.20	---	---	160.30	---	---	1978	GD005
T7351	Plate	0.50	-80	L-T	64.9	16.000	0.364	4.000	---	---	36.37	94.80	---	---	150.50	---	---	1978	GD005
T7351	Plate	0.50	-80	L-T	64.9	16.000	0.508	4.010	---	---	37.21	97.30	---	---	129.30	---	---	1978	GD005

* NOTE: NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STANDARD DEVIATION.

TABLE 8.19.2.2 (CONTINUED)

ALUMINUM 7475 K_C

CONDITION HEAT TREAT	PRODUCT FORM	PRODUCT THICK (in.)	TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN WIDTH (in.) W	SPECIMEN THICK (in.) B	CRACK LENGTH INIT (in.) $2a_o$	CRACK LENGTH FINAL (in.) $2a_f$	GROSS STRESS ONSET (Ksi) σ_o	GROSS STRESS MAX (Ksi) σ_{Max}	K_{app} (Ksi$\sqrt{in}$)	K_{app} MEAN	K_{app} STAN DEV	K_C (Ksi$\sqrt{in}$)	K_C MEAN	K_C STAN DEV	DATE	REFER
BUCKLING OF CRACK EDGES NOT RESTRAINED																			
T7351	Plate	0.50	R.T.	L-T	64.9	6.000	0.255	2.822	---	---	33.85	82.90*	---	---	120.70*	---	---	1978	GD005
		0.50			64.9	6.004	0.256	2.004	---	---	41.77	79.70*			116.40*			1978	GD005
T7351	Plate	0.50	R.T.	L-T	64.9	6.013	0.350	1.980	---	---	42.55	80.50*	---	---	116.60*	---	---	1978	GD005
T7351	Plate	0.50	R.T.	L-T	64.9	6.080	0.507	2.008	---	---	41.59	79.30*	---	---	117.30*	---	---	1978	GD005
T7351	Plate	0.50	R.T.	L-T	64.9	6.070	0.514	2.032	---	---	38.34	73.70*	---	---	106.20*	---	---	1978	GD005
T7351	Plate	0.50	R.T.	L-T	64.9	16.000	0.253	4.020	---	---	44.47	116.30*	---	---	166.30*	---	---	1978	GD005
		0.50			64.9	16.000	0.256	4.030	---	---	44.68	117.00*			177.70*			1978	GD005
T7351	Plate	0.50	R.T.	L-T	64.9	16.000	0.355	4.020	---	---	47.84	125.10*	---	---	198.90*	---	---	1978	GD005
		0.50			64.9	16.020	0.358	4.000	---	---	46.31	120.80*			186.20*			1978	GD005
T7351	Plate	0.50	R.T.	L-T	64.9	16.000	0.507	3.980	---	---	46.28	120.30*	---	---	193.70*	---	---	1978	GD005
		0.50			64.9	15.970	0.511	4.000	---	---	45.00	117.40*			178.30*			1978	GD005
		0.50			64.9	15.990	0.514	4.010	---	---	45.93	120.00*			193.90*			1978	GD005
T761	Sheet	0.03	R.T.	L-T	72.8	16.000	0.032	4.000	4.460	---	27.00	70.41	---	---	75.09	---	---	1973	86842
T761	Sheet	0.04	R.T.	L-T	73.7	16.000	0.041	4.000	4.640	13.10	31.10	81.10	79.1	2.8	88.60	85.3	4.6	1973	86842
		0.04			74.3	16.000	0.041	4.000	4.440	---	29.60	77.19			82.10			1973	86842
T761	Sheet	0.06	R.T.	L-T	66.4	16.000	0.061	4.000	4.720	---	35.70	93.10	86.9	4.9	102.78	95.9	5.9	1972	84368
		0.06			70.5	16.000	0.061	5.000	5.740	---	27.40	81.77			89.48			1972	84368
		0.06			70.5	16.000	0.061	6.000	6.800	---	24.40	82.15			89.99			1972	84368
		0.06			70.5	16.000	0.061	2.000	2.480	---	49.70	88.95*			99.57*			1972	84368

* NOTE: NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STANDARD DEVIATION.

TABLE 8.19.2.2 (CONTINUED)

ALUMINUM 7475 K_C

CONDITION HEAT TREAT	PRODUCT FORM	PRODUCT THICK (in.)	TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN WIDTH (in.) W	SPECIMEN THICK (in.) B	CRACK LENGTH INIT (in.) $2a_o$	CRACK LENGTH FINAL (in.) $2a_f$	GROSS STRESS ONSET (Ksi) σ_o	GROSS STRESS MAX (Ksi) σ_{Max}	K_{app} $(Ksi\sqrt{in})$	K_{app} MEAN	K_{app} STAN DEV	K_C $(Ksi\sqrt{in})$	K_C MEAN	K_C STAN DEV	DATE	REFER
BUCKLING OF CRACK EDGES NOT RESTRAINED																			
T761 Cont'd	Sheet Cont'd	0.06	R.T. Cont'd	L-T Cont'd	70.5	16.000	0.062	1.000	1.660	---	61.40	77.14*	Cont'd	Cont'd	99.81*	Cont'd	Cont'd	1972	84368
		0.06			70.5	16.000	0.062	4.000	4.880	---	33.90	88.41			99.63			1972	84368
		0.06			70.5	16.000	0.062	3.000	3.520	---	40.20	89.21			97.45			1972	84368
T761	Sheet	0.09	R.T.	L-T	69.8	16.000	0.089	4.000	4.900	19.70	39.70	103.53	100.4	2.1	116.98*	114.2	2.9	1973	86842
		0.09			66.7	15.880	0.090	4.000	5.050	---	38.90	101.51			116.94*			1973	86213
		0.09			66.7	15.880	0.090	4.000	4.920	---	37.70	98.38			111.48*			1973	86213
		0.09			70.7	15.880	0.090	3.980	4.970	---	37.70	98.09			112.19			1973	86213
		0.09			70.7	15.880	0.090	3.970	5.150	---	38.20	99.25			116.28			1973	86213
		0.09			67.3	16.000	0.091	4.000	5.240	18.50	38.90	101.44			119.61*			1973	86842
T761	Sheet	0.12	R.T.	L-T	66.4	16.000	0.125	4.000	5.300	17.50	41.30	107.70*	---	---	127.93*	---	---	1973	86842
		0.12			66.8	16.000	0.125	4.000	5.240	16.00	39.70	103.53			122.07*			1973	86842
T761	Sheet	0.18	R.T.	L-T	66.4	16.000	0.185	4.000	6.000	17.60	42.00	109.53*	---	---	141.40*	---	---	1973	86842
T761	Sheet	0.18	R.T.	L-T	69.3	16.000	0.192	4.000	5.880	17.80	46.20	120.48*	---	---	153.38*	---	---	1973	86842
T761	Plate	0.25	R.T.	L-T	67.0	16.000	0.245	4.000	5.120	---	42.70	111.35*	---	---	129.36*	---	---	1973	86842
		0.25			67.8	16.000	0.249	4.000	4.970	---	27.90	72.76			82.94			1973	86842
T761	Plate	0.25	82	L-T	66.6	3.000	0.240	1.130	2.209	---	39.80	58.20*	---	---	116.77*	---	---	1973	86213
		0.25			66.6	3.000	0.240	1.183	2.234	---	39.20	59.18*			117.52*			1973	86213
T761	Plate	0.25	82	L-T	72.2	3.000	0.250	1.150	1.743	---	34.20	50.63	51.1	0.6	72.31*	---	---	1973	86213
		0.25			72.2	3.000	0.250	1.133	2.302	---	35.20	51.54			111.97*			1973	86213

* NOTE: NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STANDARD DEVIATION.

TABLE 8.19.2.2 (CONTINUED)

ALUMINUM 7475 K_C																			
CONDITION HEAT TREAT	PRODUCT		TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN		CRACK LENGTH		GROSS STRESS		K_{app}			K_C			DATE	REFER
	FORM	THICK (in.)				WIDTH (in.) W	THICK (in.) B	INIT (in.) $2a_o$	FINAL (in.) $2a_f$	ONSET (Ksi) σ_o	MAX (Ksi) σ_{Max}	K_{app} (Ksi$\sqrt{in}$)	K_{app} MEAN	STAN DEV	K_c (Ksi$\sqrt{in}$)	K_c MEAN	STAN DEV		
BUCKLING OF CRACK EDGES NOT RESTRAINED																			
T761	Sheet	0.12	83	L-T	75.2	3.000	0.129	1.230	2.278	---	40.10	62.33*	---	---	124.86*	---	---	1973	86213
		0.12			75.2	3.000	0.129	1.117	2.158	---	43.20	62.63*			121.76*			1973	86213
T761	Sheet	0.06	84	L-T	73.6	16.000	0.063	3.000	3.630	28.10	37.00	82.11	---	---	91.27	---	---	1973	86213
		0.06			73.6	16.000	0.063	1.000	1.740	52.70	60.40	75.88*			100.59*			1973	86213
T761	Sheet	0.09	86	L-T	66.7	3.000	0.090	1.150	1.988	---	40.70	60.26*	---	---	101.17*	---	---	1973	86213
		0.09			66.7	3.000	0.090	1.170	1.988	---	40.70	61.00*			101.17*			1973	86213
		0.09			70.7	3.000	0.095	1.185	1.981	---	40.90	61.83*			101.10*			1973	86213
		0.09			70.7	3.000	0.095	1.160	1.972	---	40.00	59.58*			98.33*			1973	86213
T761	Sheet	0.12	86	L-T	67.1	3.000	0.115	1.180	2.014	---	40.00	60.32*	---	---	101.26*	---	---	1973	86213
		0.12			67.1	3.000	0.115	1.200	2.027	---	40.00	61.06*			102.13*			1973	86213
T761	Sheet	0.06	88	L-T	73.6	16.000	0.063	4.000	4.170	19.40	28.90	75.37	74.0	8.7	77.22	75.8	9.5	1973	86213
		0.06			73.6	16.000	0.063	6.000	6.140	9.00	19.20	64.64			65.70			1973	86213
		0.06			73.6	16.000	0.064	4.000	4.230	15.70	31.40	81.89			84.62			1973	86213
T761	Sheet	0.12	R.T.	T-L	72.2	3.000	0.129	1.133	2.164	---	42.60	62.37*	---	---	120.63*	---	---	1973	86213
		0.12			72.2	3.000	0.129	1.193	2.251	---	41.70	63.34*			126.73*			1973	86213
T761	Sheet	0.03	R.T.	T-L	69.4	16.000	0.032	4.000	4.840	---	29.70	77.45	---	---	86.84	---	---	1973	86842
T761	Sheet	0.04	R.T.	T-L	70.8	16.000	0.041	4.000	4.420	15.20	30.60	79.80	82.1	3.3	84.65	87.1	3.5	1973	86842
		0.04			71.1	16.000	0.042	4.000	4.420	11.60	32.40	84.49			89.63			1973	86842

* NOTE: NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STANDARD DEVIATION.

TABLE 8.19.2.2 (CONTINUED)

ALUMINUM 7475 K_C

CONDITION HEAT TREAT	PRODUCT FORM	PRODUCT THICK (in.)	TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN WIDTH (in.) W	SPECIMEN THICK (in.) B	CRACK LENGTH INIT (in.) $2a_o$	CRACK LENGTH FINAL (in.) $2a_f$	GROSS STRESS ONSET (Ksi) σ_o	GROSS STRESS MAX (Ksi) σ_{Max}	K_{app} (Ksi$\sqrt{in}$)	K_{app} MEAN	K_{app} STAN DEV	K_C (Ksi$\sqrt{in}$)	K_C MEAN	K_C STAN DEV	DATE	REFER
BUCKLING OF CRACK EDGES NOT RESTRAINED																			
T761	Sheet	0.06	R.T.	T-L	69.0	16.000	0.061	3.000	3.460	---	40.50	89.87	86.4	3.1	97.24	94.5	3.1	1972	84368
		0.06			69.0	16.000	0.061	5.000	5.840	---	28.10	83.86			92.86			1972	84368
		0.06			65.0	16.000	0.062	4.000	4.560	---	33.10	86.32			93.30			1972	84368
		0.06			69.0	16.000	0.062	6.000	6.800	---	24.60	82.82			90.72			1972	84368
		0.06			69.0	16.000	0.062	1.000	1.520	---	61.00	76.64*			94.78*			1972	84368
		0.06			69.0	16.000	0.062	2.000	2.500	---	50.80	90.92*			102.21*			1972	84368
		0.06			69.0	16.000	0.063	4.000	4.720	---	34.10	88.93			98.17			1972	84368
T761	Sheet	0.09	R.T.	T-L	68.3	16.000	0.089	4.000	4.660	19.70	37.20	97.01	93.4	4.0	106.26	103.1	4.4	1973	86842
		0.09			65.3	15.880	0.090	4.000	4.950	---	34.50	90.03			102.41			1973	86213
		0.09			65.3	15.880	0.090	4.000	4.920	---	35.20	91.85			104.08			1973	86213
		0.09			68.9	15.880	0.090	3.990	4.620	---	37.60	97.97			106.93			1973	86213
		0.09			68.9	15.880	0.090	3.990	4.600	---	33.80	88.07			95.86			1973	86213
		0.09			64.6	16.000	0.090	4.000	4.920	17.40	36.60	95.45			108.12*			1973	86842
T761	Sheet	0.12	R.T.	T-L	64.9	16.000	0.125	4.000	5.240	17.00	37.40	97.53	94.7	4.1	115.00*	---	---	1973	86842
		0.12			65.6	16.000	0.125	4.000	5.240	17.00	35.20	91.80			108.23			1973	86842
T761	Sheet	0.18	R.T.	T-L	65.3	16.000	0.185	4.000	5.660	18.20	39.80	103.79*	---	---	128.75*	---	---	1973	86842
T761	Sheet	0.18	R.T.	T-L	67.0	16.000	0.193	4.000	5.700	---	38.50	100.40	---	---	125.14*	---	---	1973	86842
T761	Plate	0.25	R.T.	T-L	65.9	16.000	0.245	4.000	5.660	---	40.60	105.88*	---	---	131.34*	---	---	1973	86842
		0.25			68.3	16.000	0.249	4.000	4.550	---	25.60	66.76			72.07			1973	86842

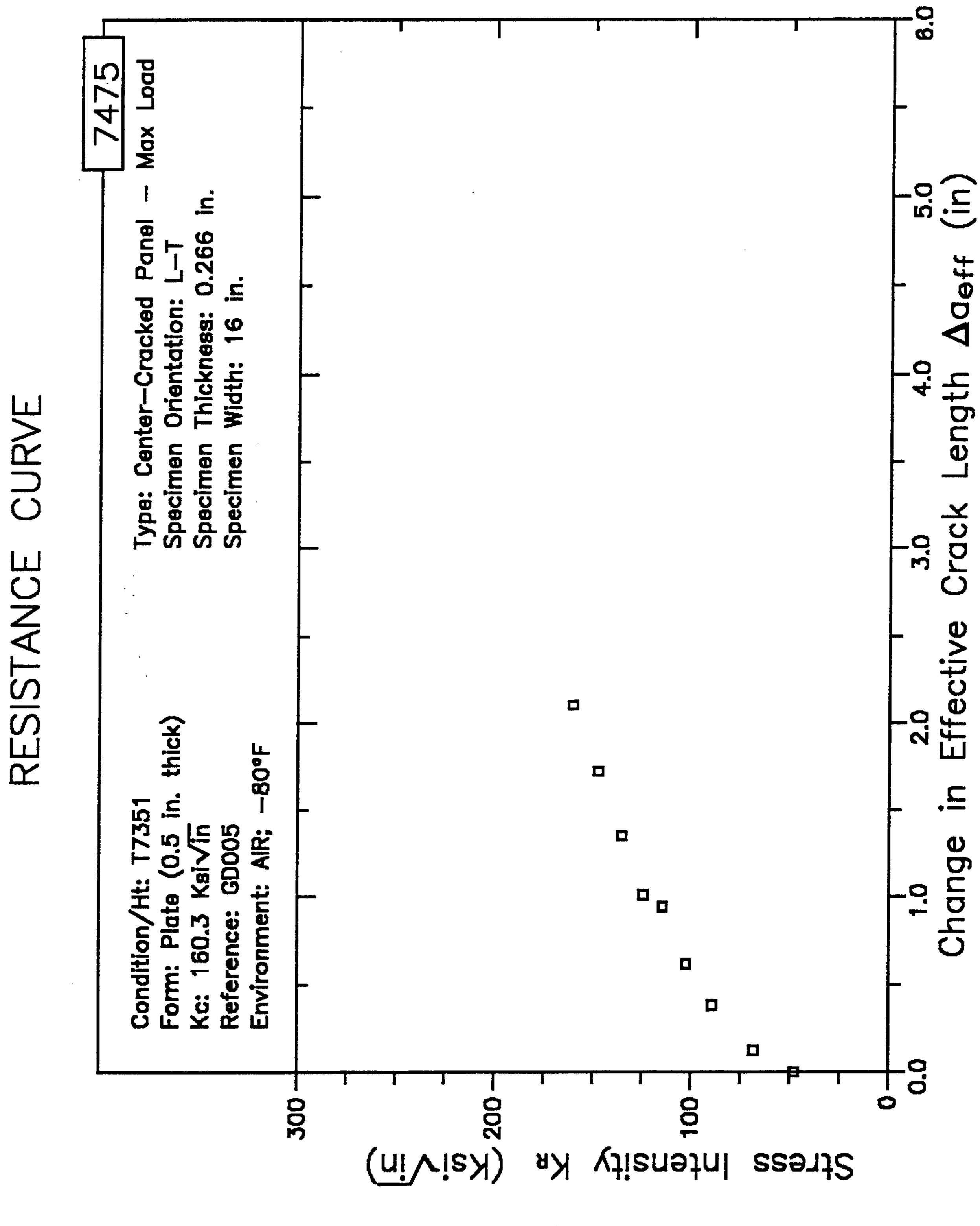
* NOTE: NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STANDARD DEVIATION.

TABLE 8.19.2.2 (CONCLUDED)

ALUMINUM 7475 K_C

CONDITION HEAT TREAT	PRODUCT		TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN		CRACK LENGTH		GROSS STRESS		K_{app}			K_C			DATE	REFER
	FORM	THICK (in.)				WIDTH (in.) W	THICK (in.) B	INIT (in.) $2a_o$	FINAL (in.) $2a_f$	ONSET (Ksi) σ_o	MAX (Ksi) σ_{Max}	K_{app} (Ksi$\sqrt{in}$)	K_{app} MEAN	STAN DEV	K_c (Ksi$\sqrt{in}$)	K_c MEAN	STAN DEV		
BUCKLING OF CRACK EDGES NOT RESTRAINED																			
T761	Plate	0.25	82	T-L	64.5	3.000	0.240	1.203	2.220	---	37.50	57.31*	---	---	111.12*	---	---	1973	86213
		0.25			64.5	3.000	0.240	1.157	2.276	---	38.50	57.21*			119.66*			1973	86213
T761	Plate	0.25	82	T-L	70.6	3.000	0.250	1.147	2.146	---	34.60	51.10	---	---	96.61*	---	---	1973	86213
		0.25			70.6	3.000	0.250	1.127	2.288	---	35.50	51.79*			111.51*			1973	86213
T761	Sheet	0.06	84	T-L	71.4	16.000	0.064	1.000	1.840	43.90	58.60	73.62*	---	---	100.45*	---	---	1973	86213
		0.06			71.4	16.000	0.064	3.000	3.460	23.00	34.20	75.89			82.11			1973	86213
T761	Sheet	0.09	86	T-L	65.3	3.000	0.090	1.155	1.952	---	39.40	58.48*	---	---	95.53*	---	---	1973	86213
		0.09			65.3	3.000	0.090	1.215	2.093	---	38.50	59.27*			103.16*			1973	86213
		0.09			68.9	3.000	0.095	1.185	1.980	---	39.80	60.16*			98.38*			1973	86213
		0.09			68.9	3.000	0.095	1.155	1.989	---	40.70	60.41*			101.17*			1973	86213
T761	Sheet	0.12	86	T-L	66.1	3.000	0.115	1.153	2.087	---	40.00	59.29*	---	---	106.70*	---	---	1973	86213
		0.12			66.1	3.000	0.115	1.198	2.012	---	39.00	59.46*			98.59*			1973	86213
T761	Sheet	0.06	88	T-L	71.4	16.000	0.063	6.000	6.510	7.70	23.40	78.78	84.6	5.0	83.52	90.2	6.0	1973	86213
		0.06			71.4	16.000	0.064	4.000	4.580	18.70	33.70	87.88			95.25			1973	86213
		0.06			71.4	16.000	0.064	4.000	4.380	13.70	33.40	87.10			91.89			1973	86213
T7651	Plate	0.50	R.T.	L-T	70.6	16.000	0.258	4.020	---	---	40.80	106.70	---	---	168.00	---	---	1978	GD005
T7651	Plate	0.50	R.T.	L-T	70.6	16.000	0.355	4.010	---	---	50.49	131.90*	---	---	217.20*	---	---	1978	GD005
T7651	Plate	0.50	R.T.	L-T	70.6	15.900	0.512	4.000	---	---	40.98	106.90	---	---	130.20	---	---	1978	GD005

* NOTE: NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STANDARD DEVIATION.



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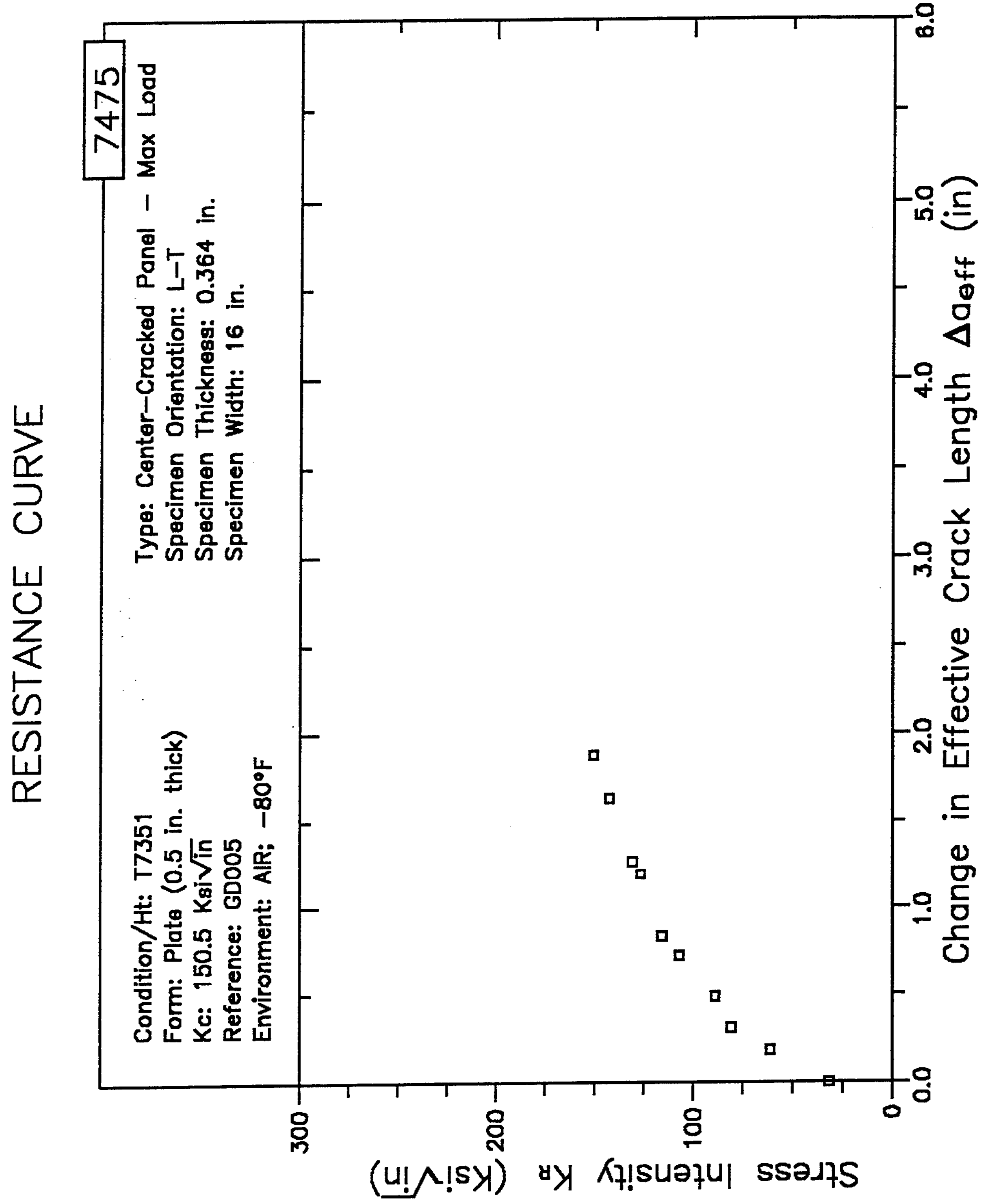

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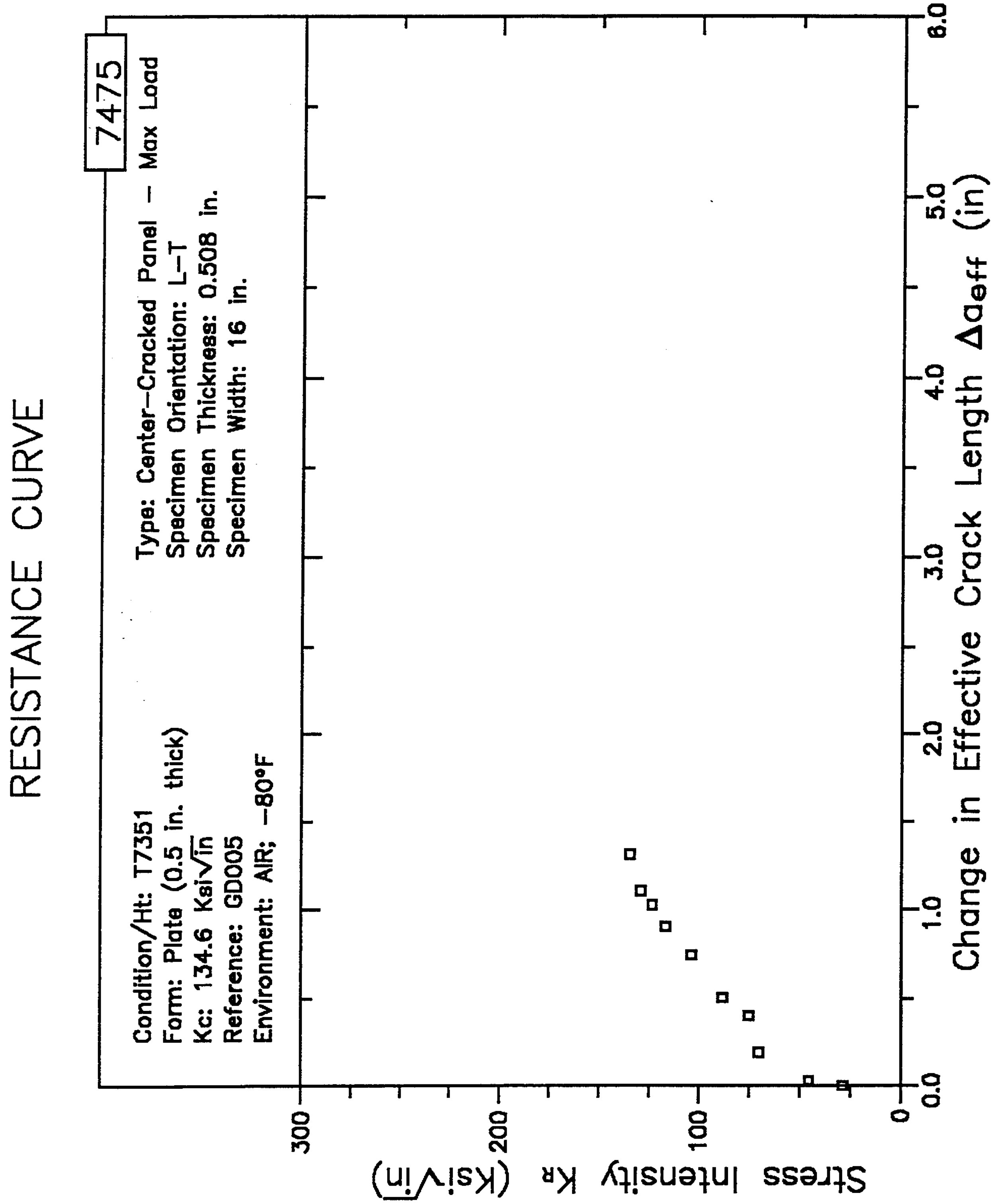

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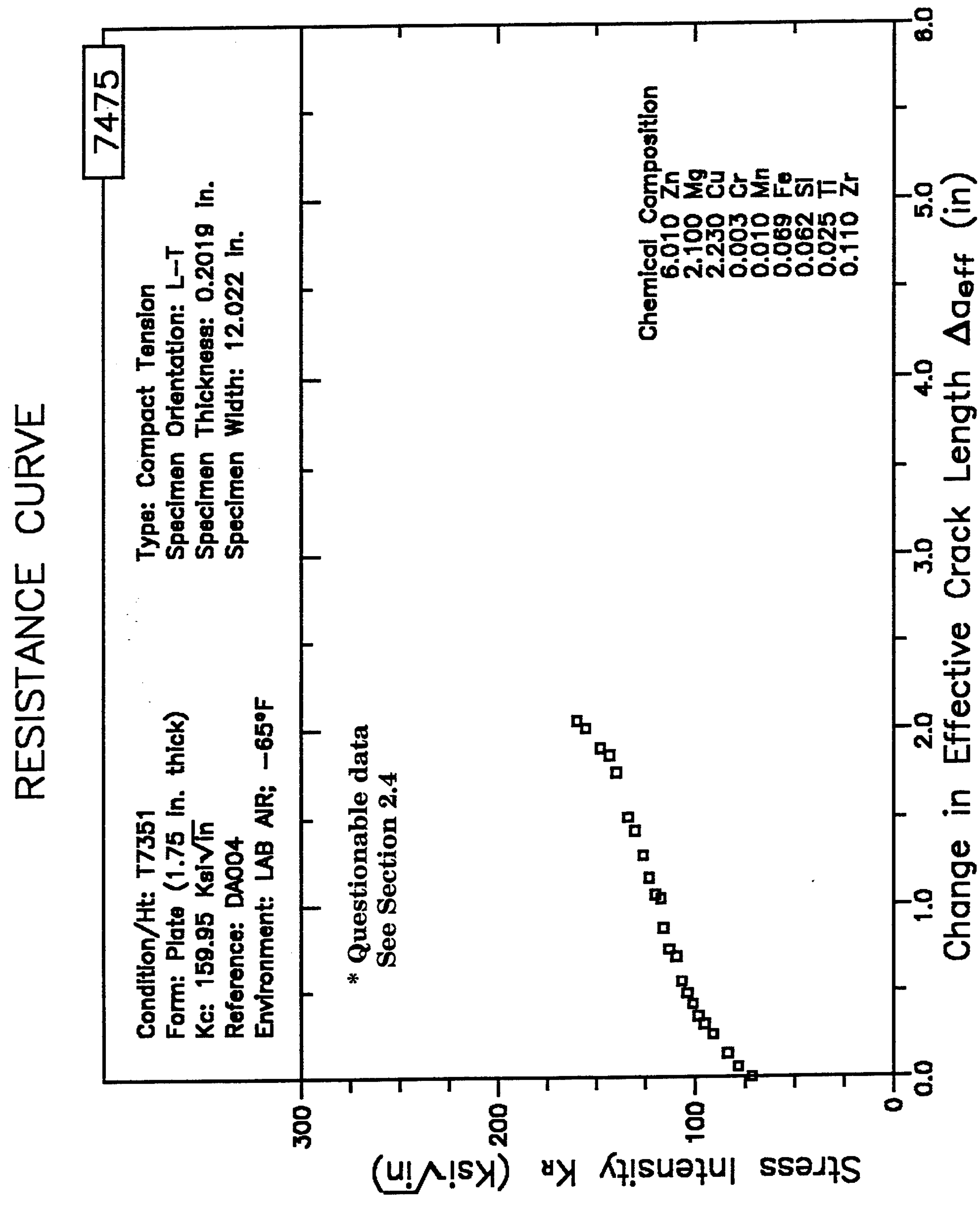

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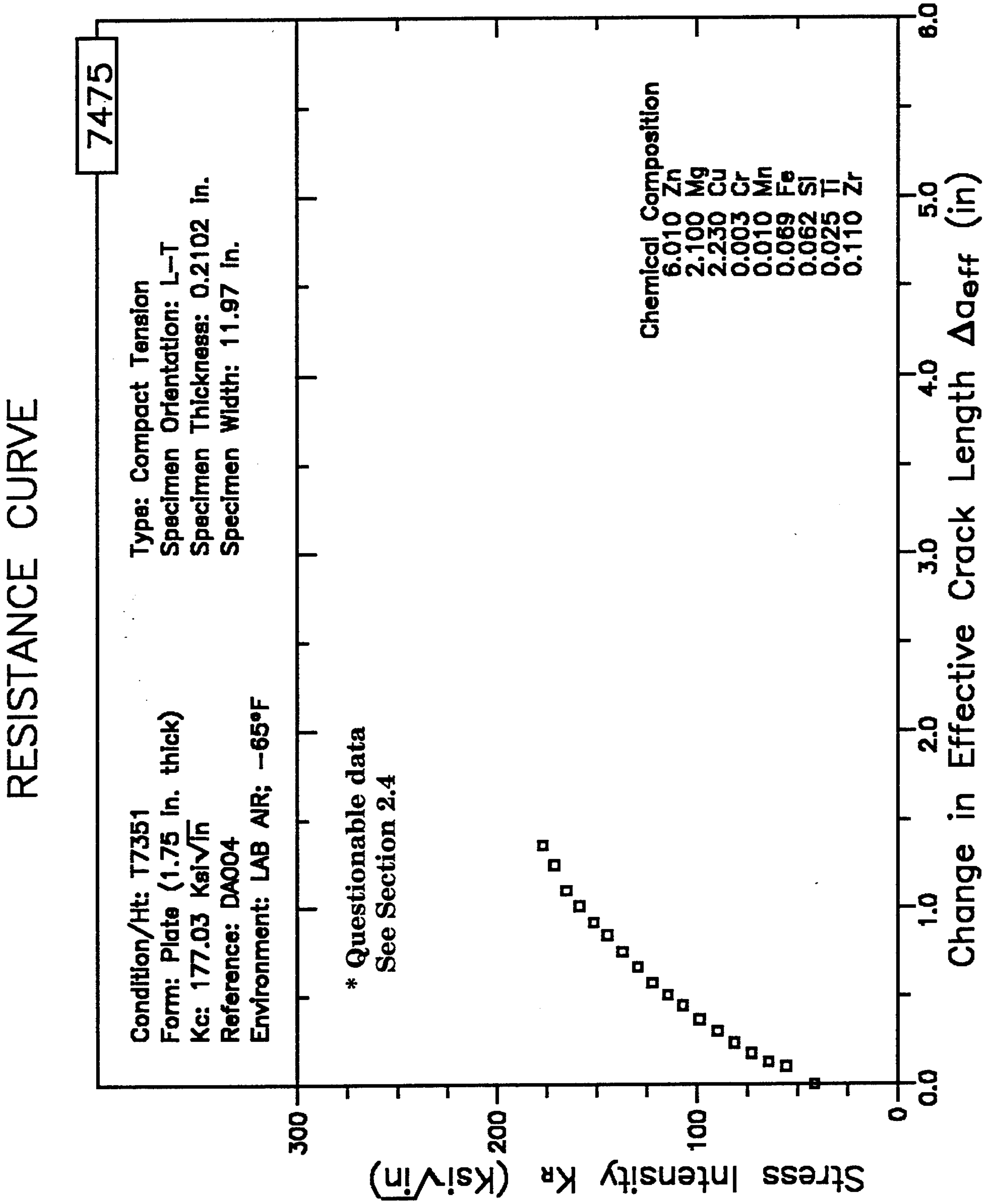

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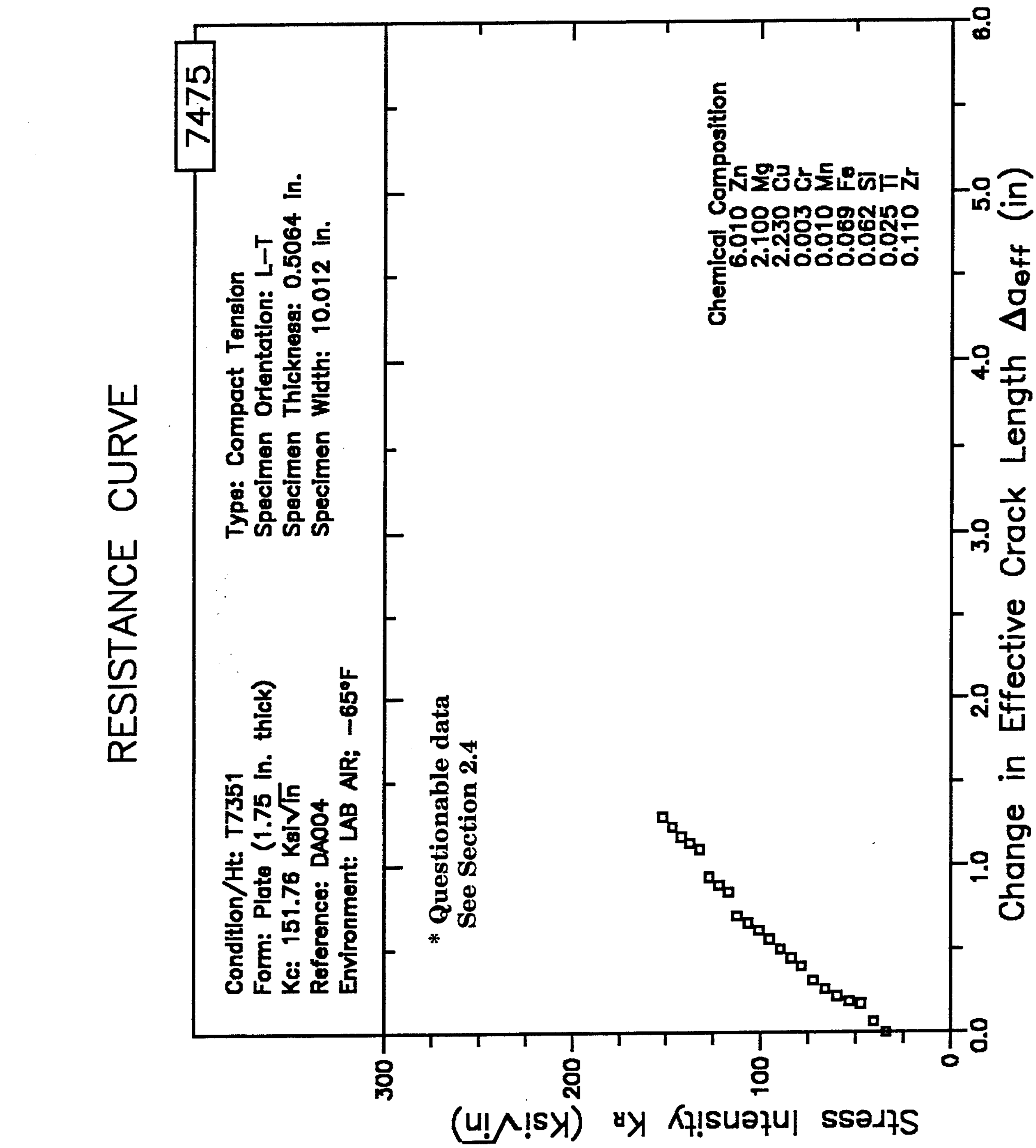

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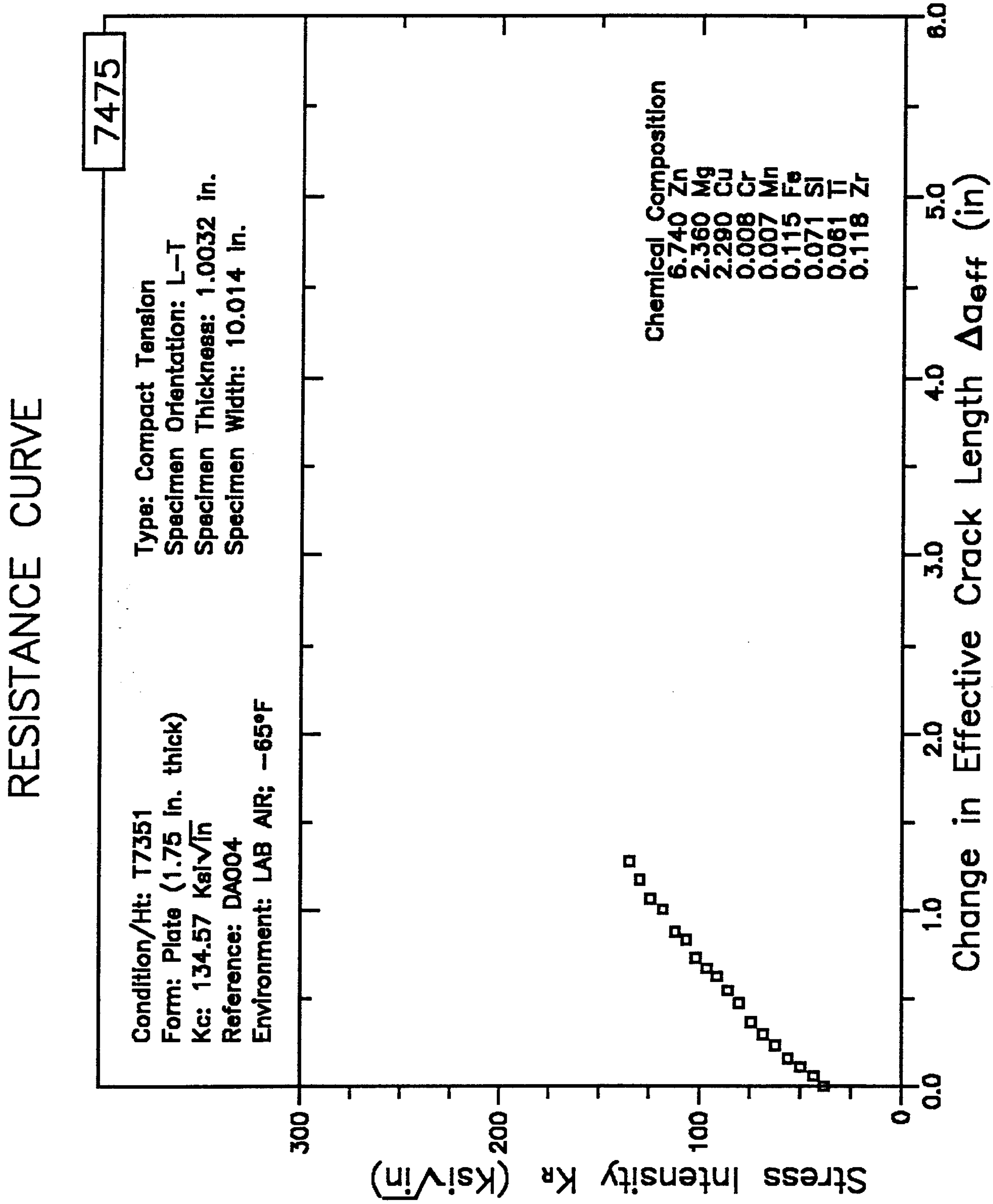

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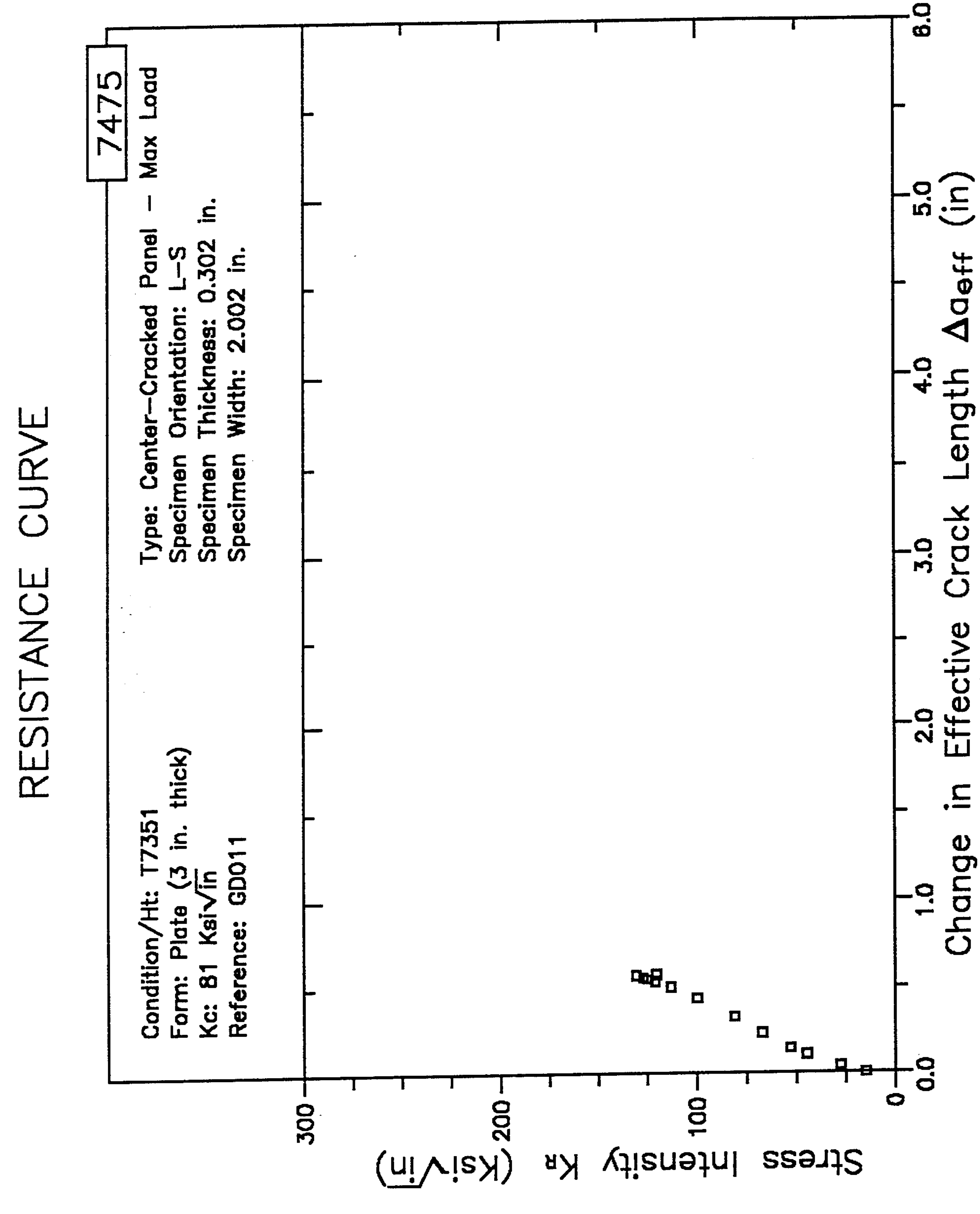

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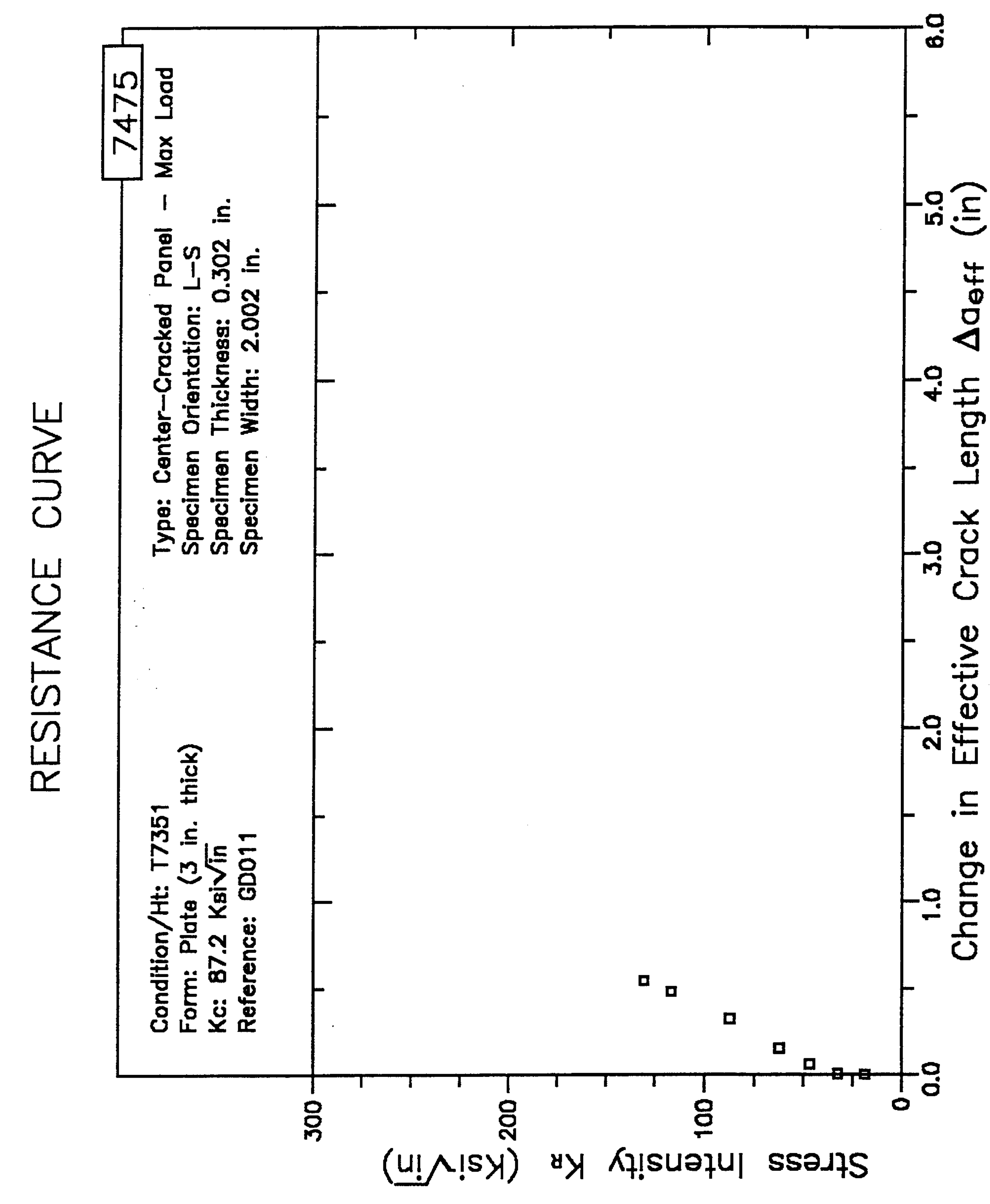

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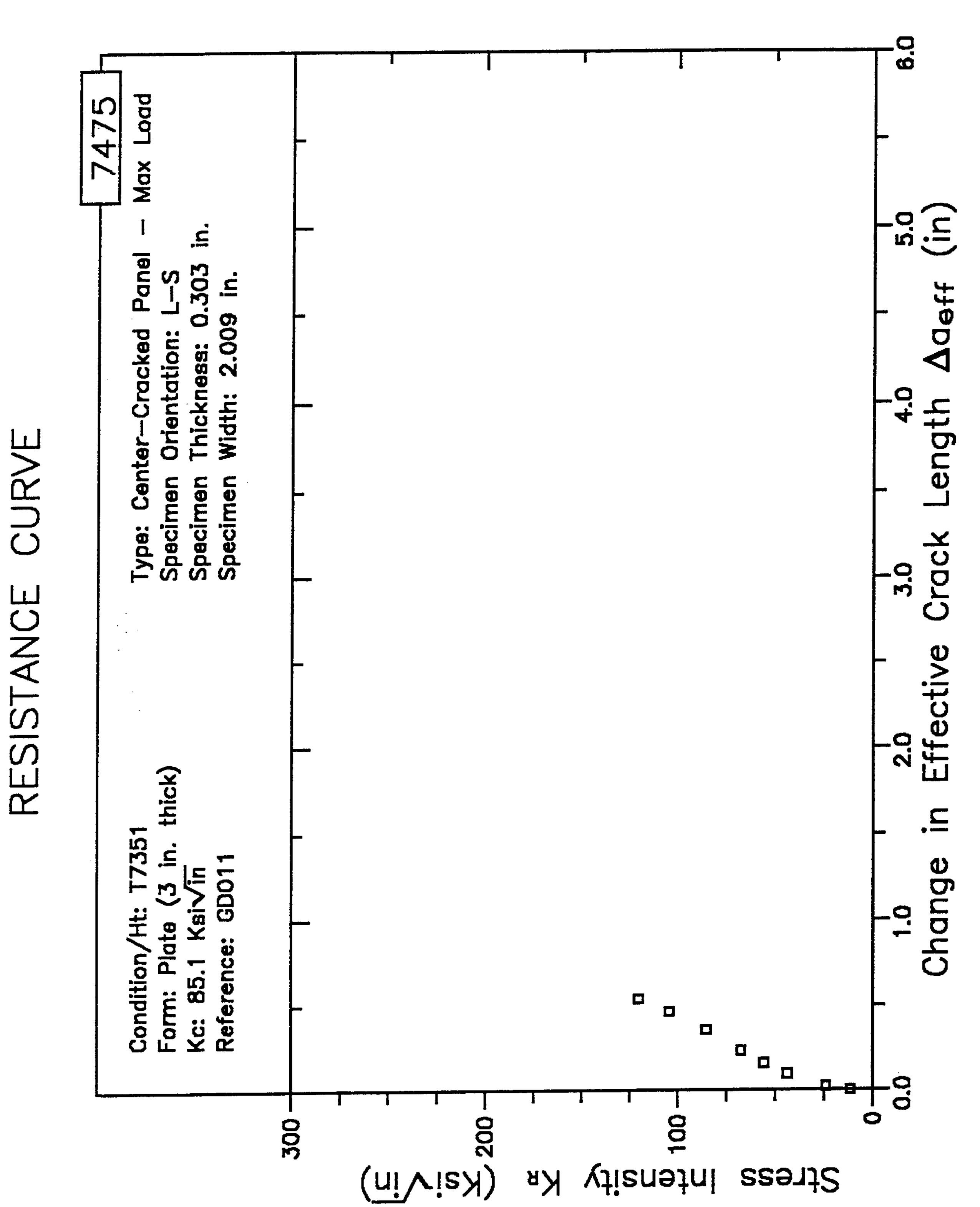

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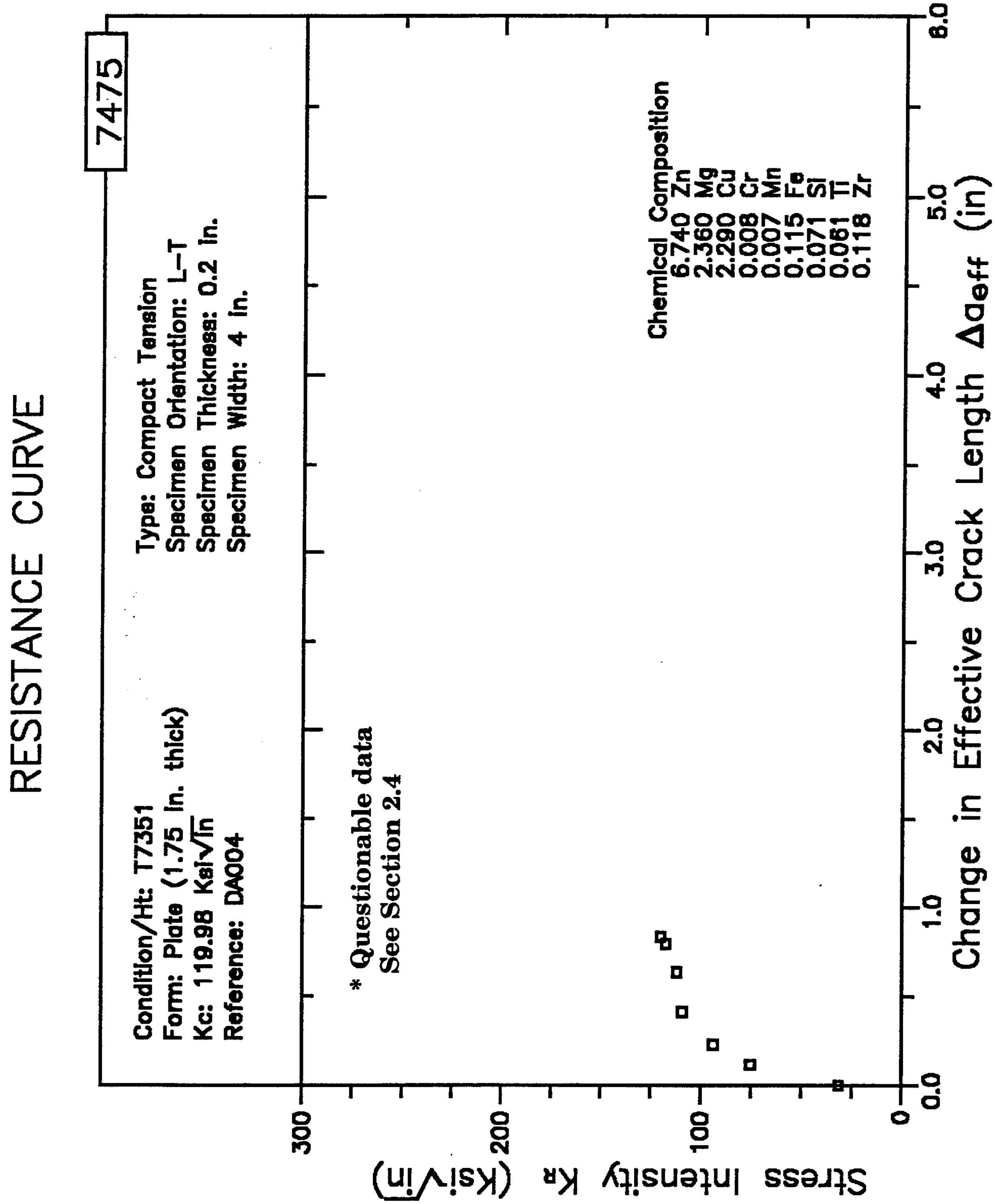

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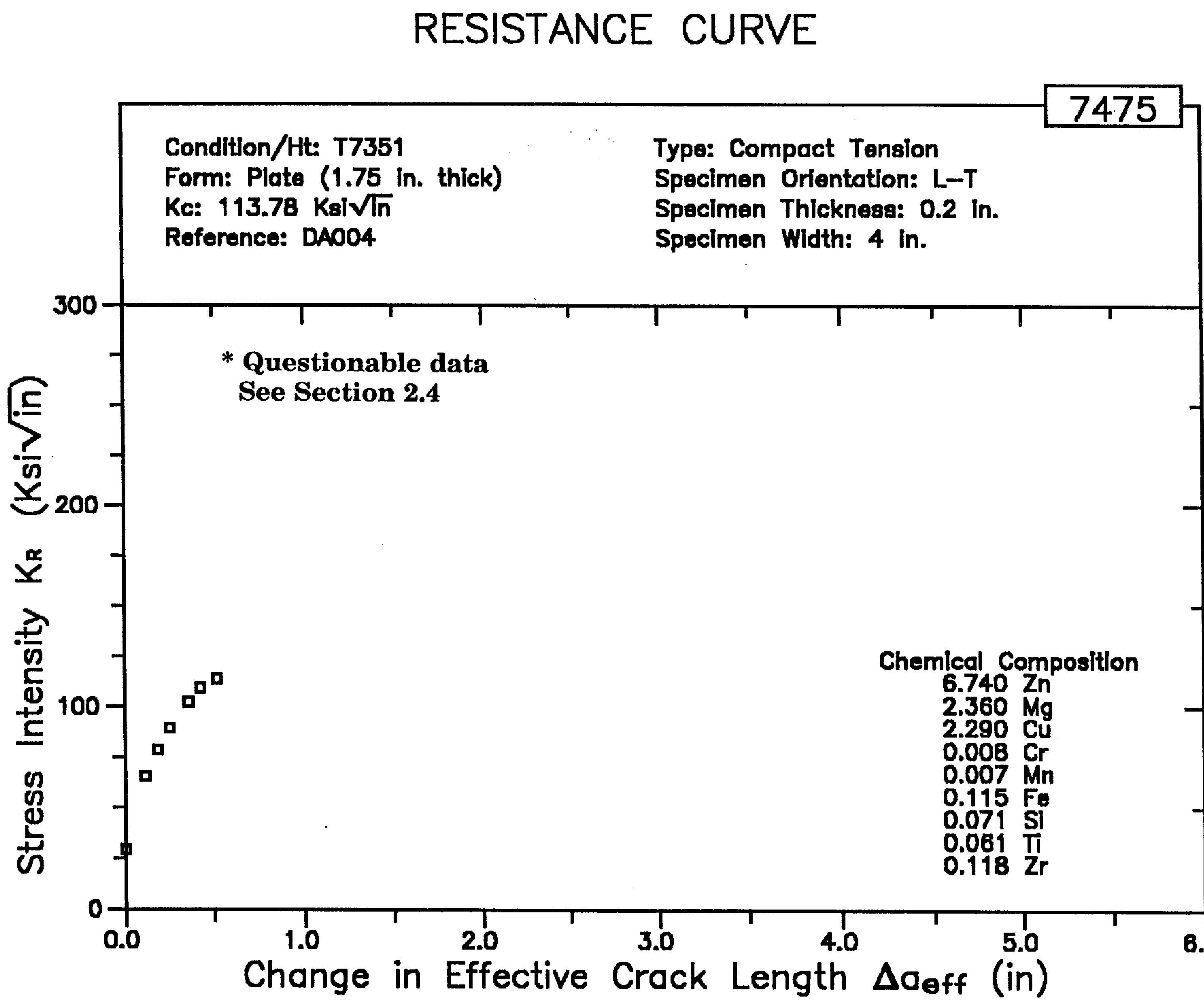

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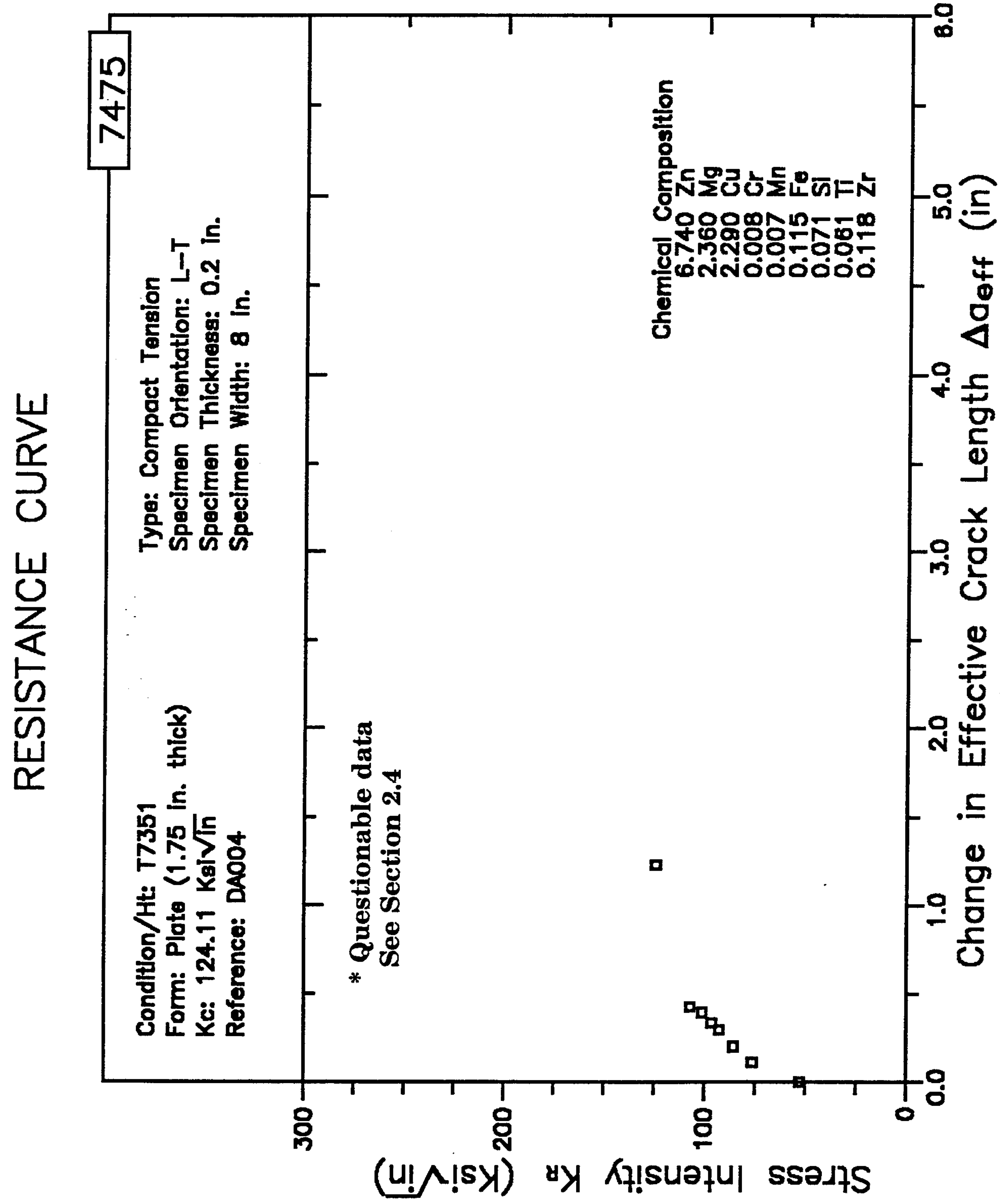

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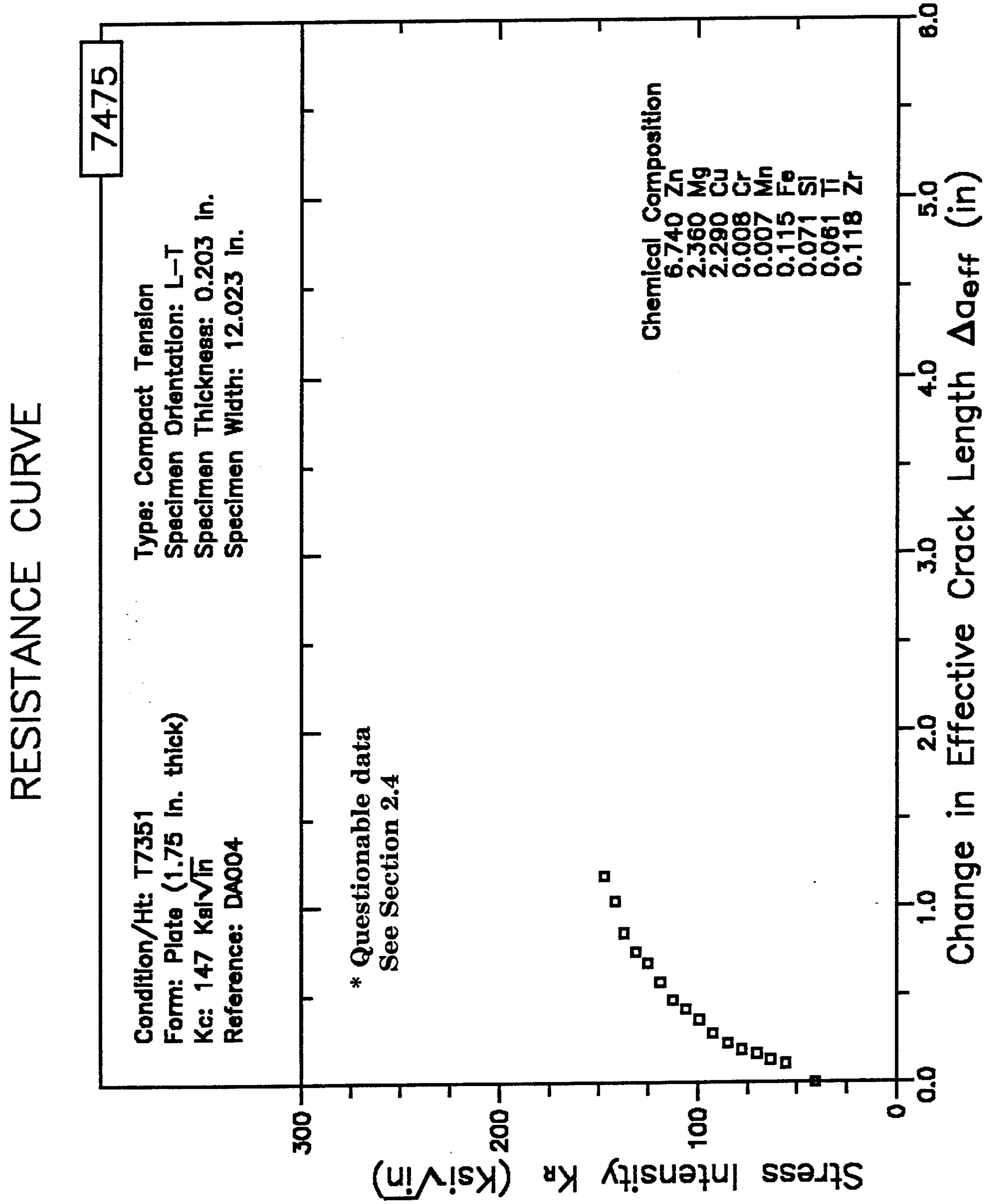

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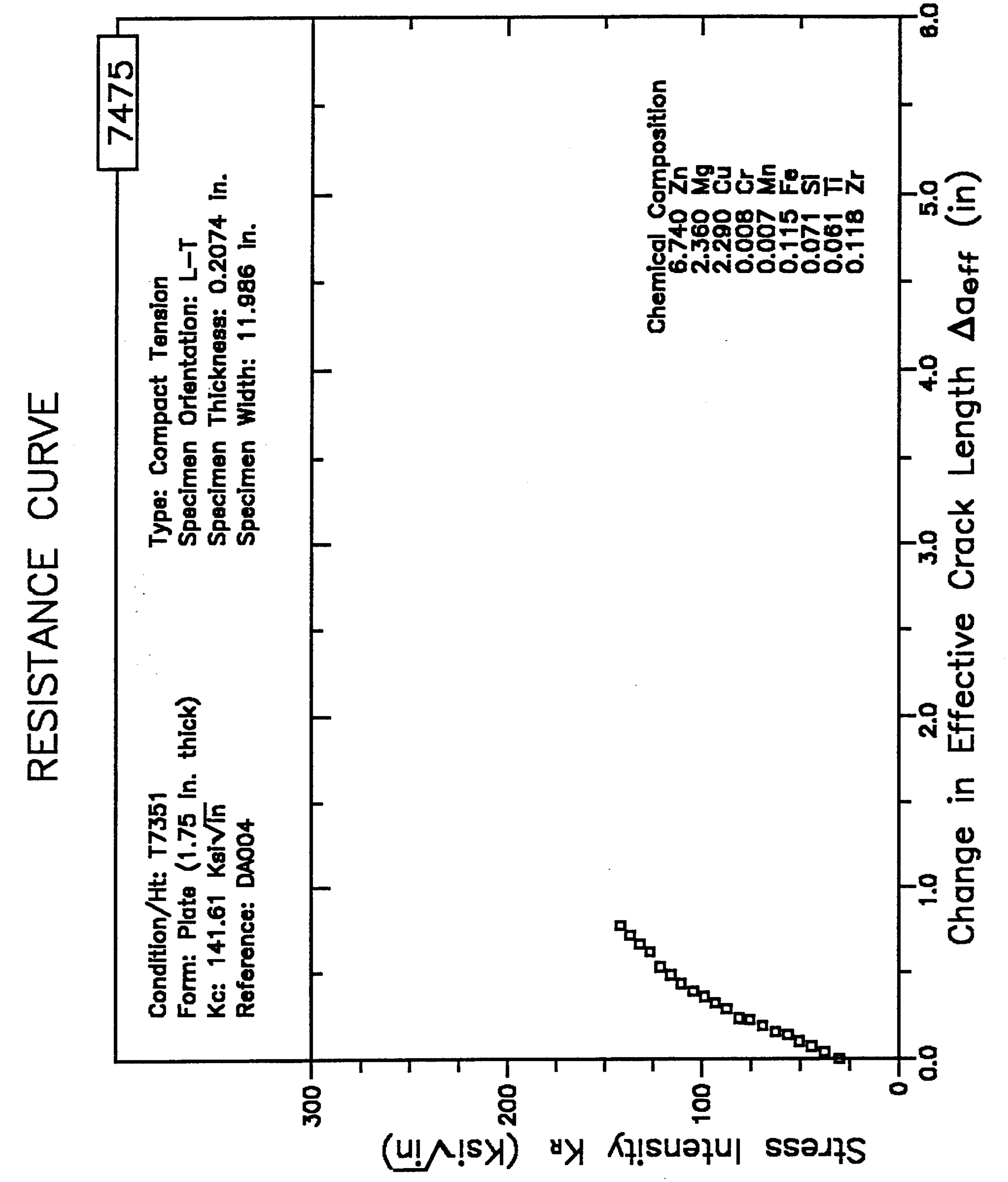

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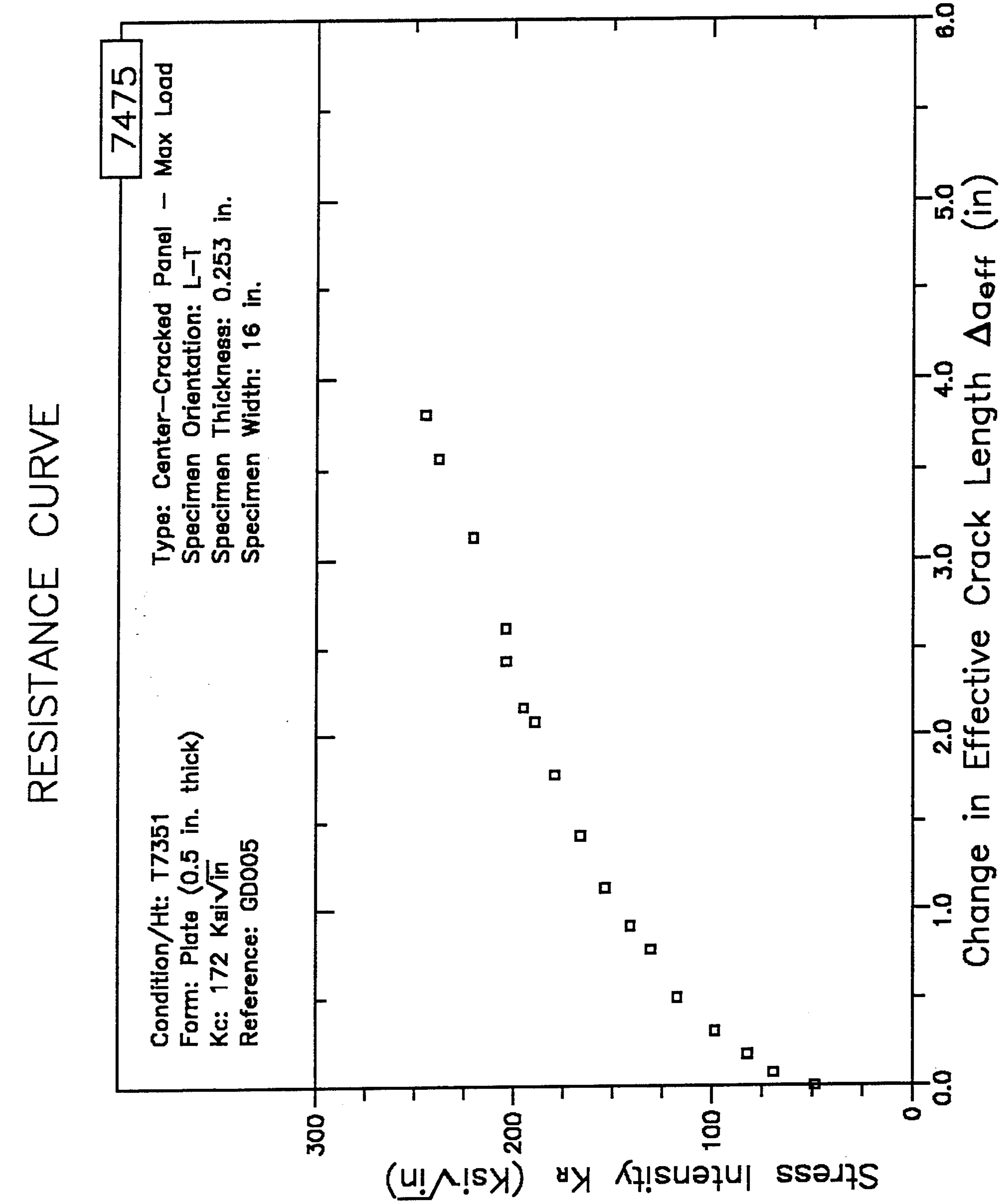

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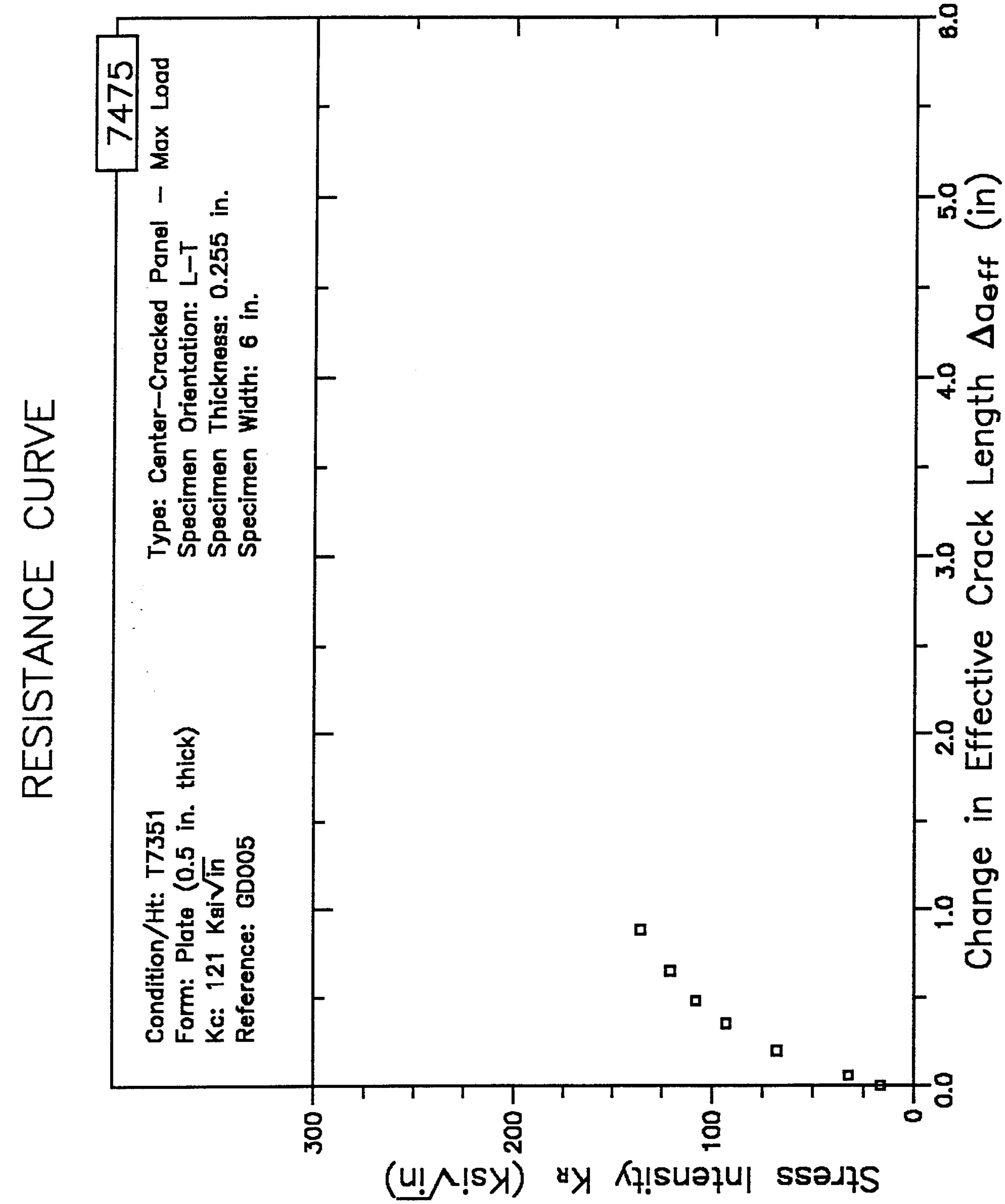

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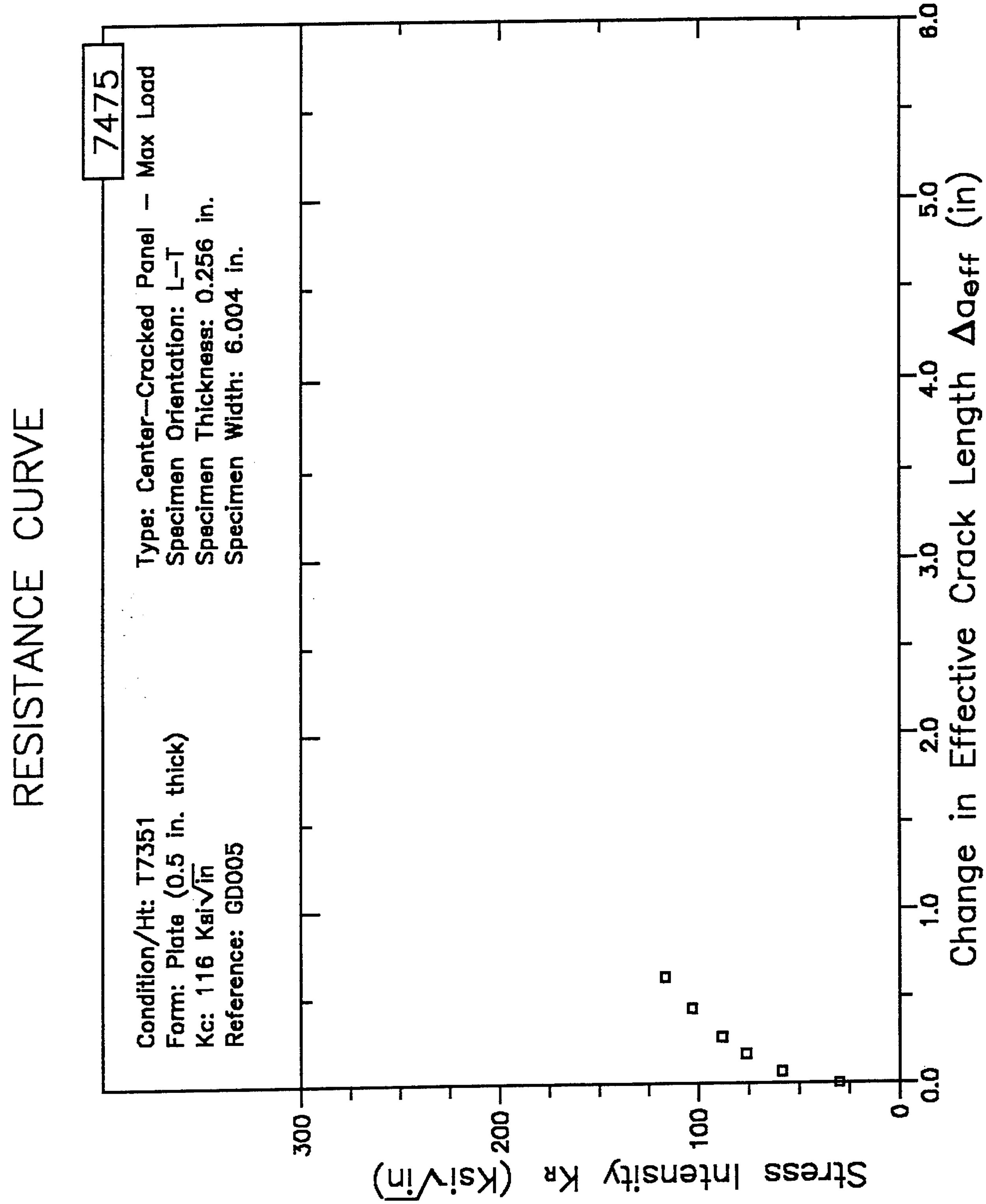

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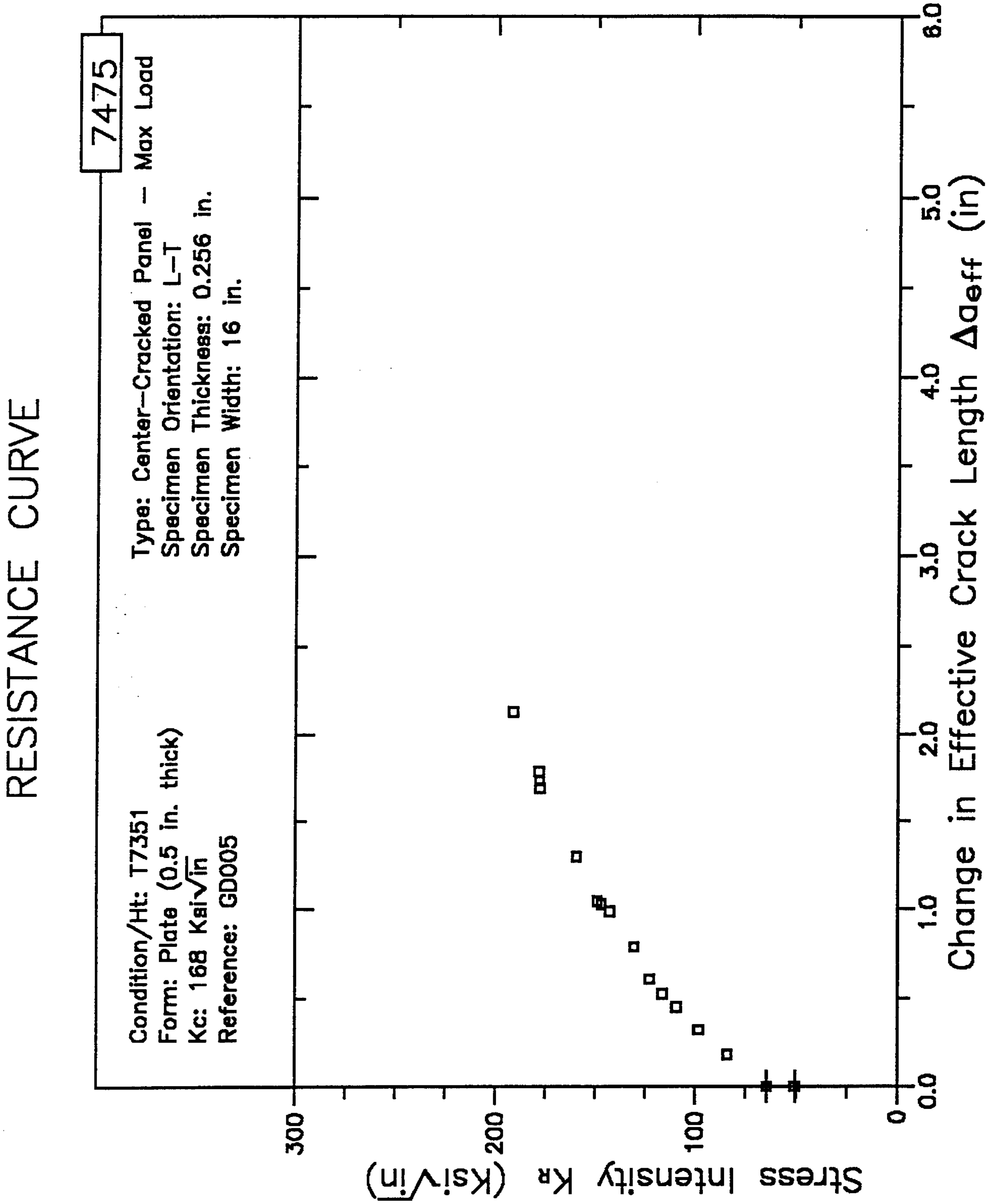

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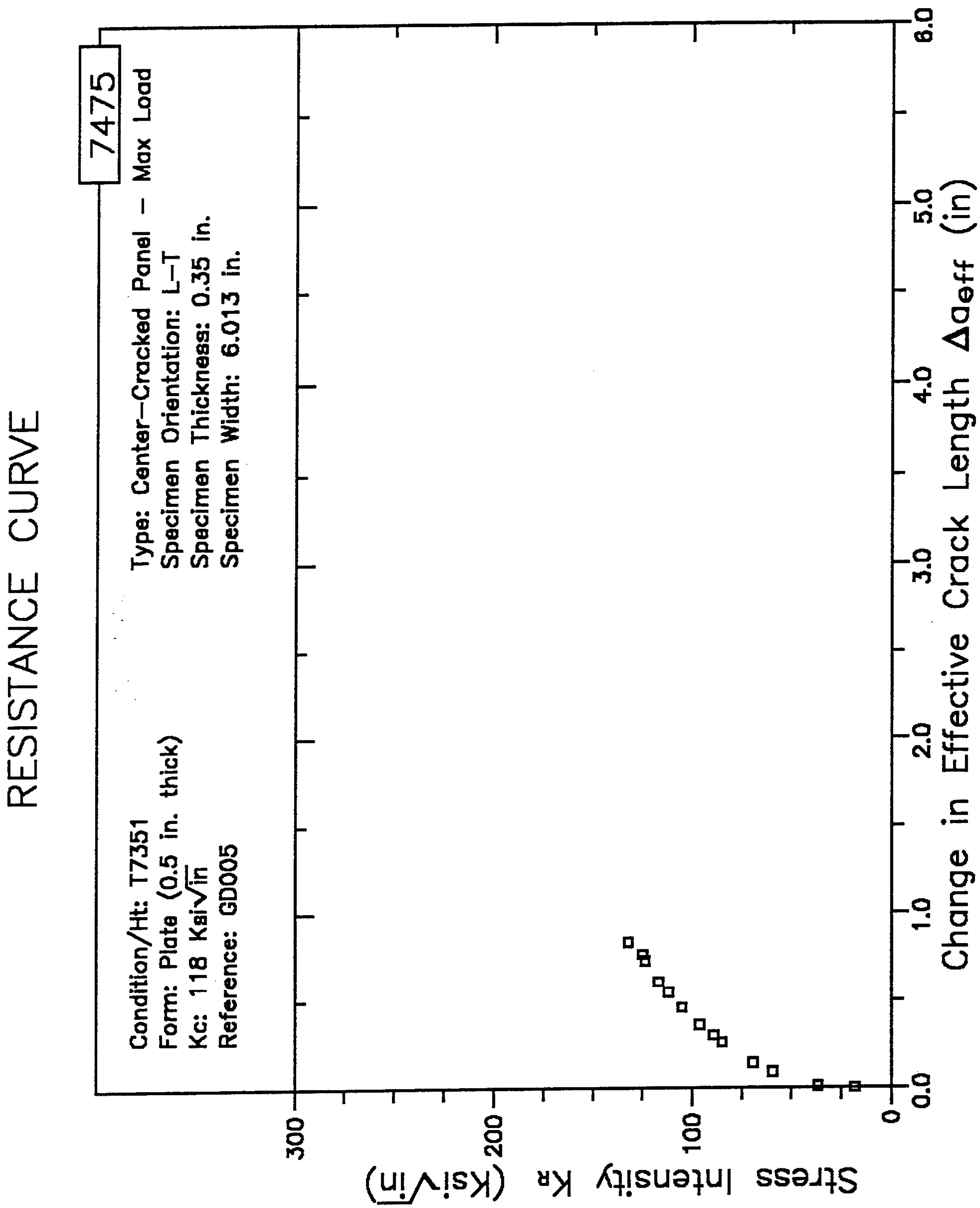

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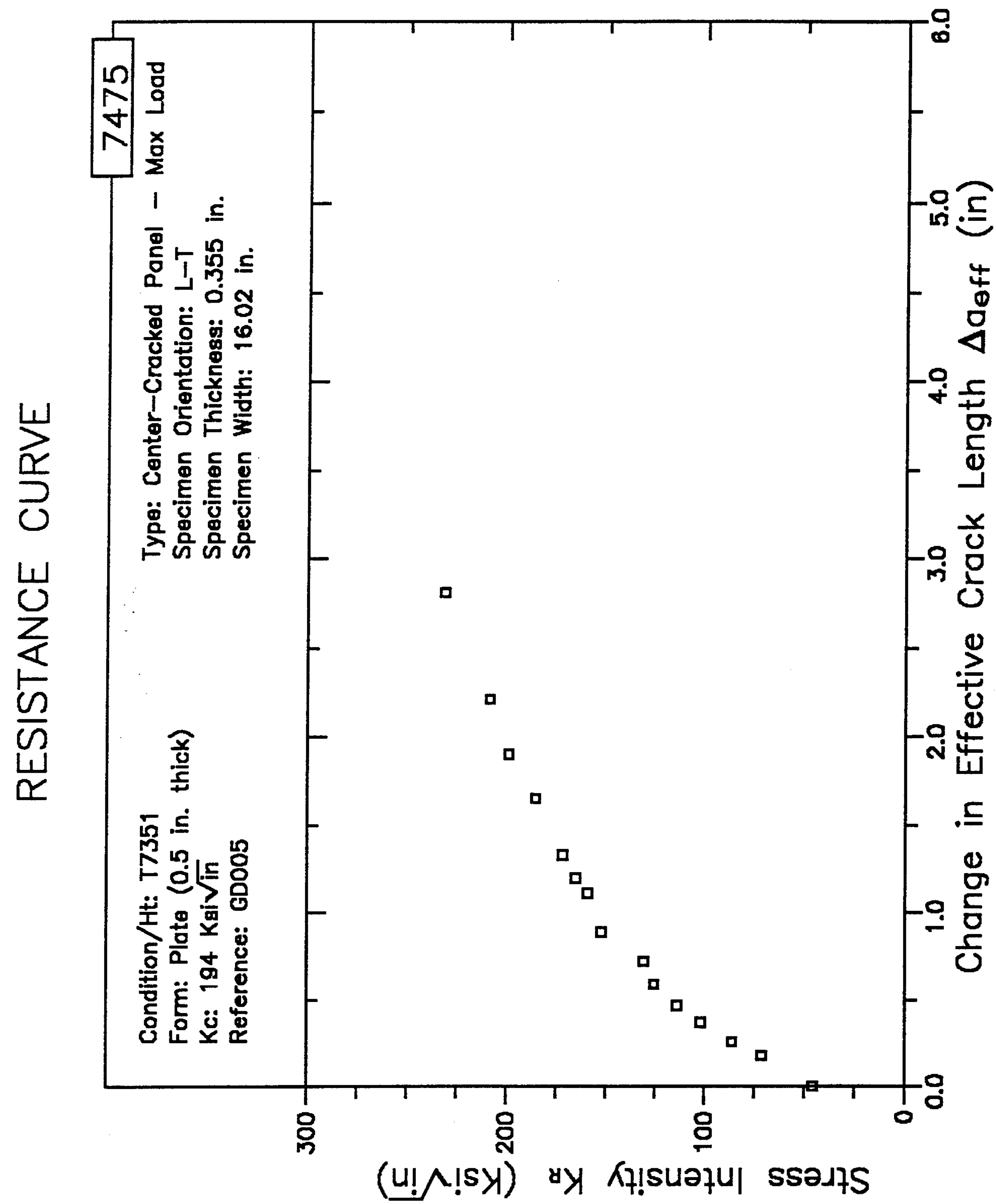

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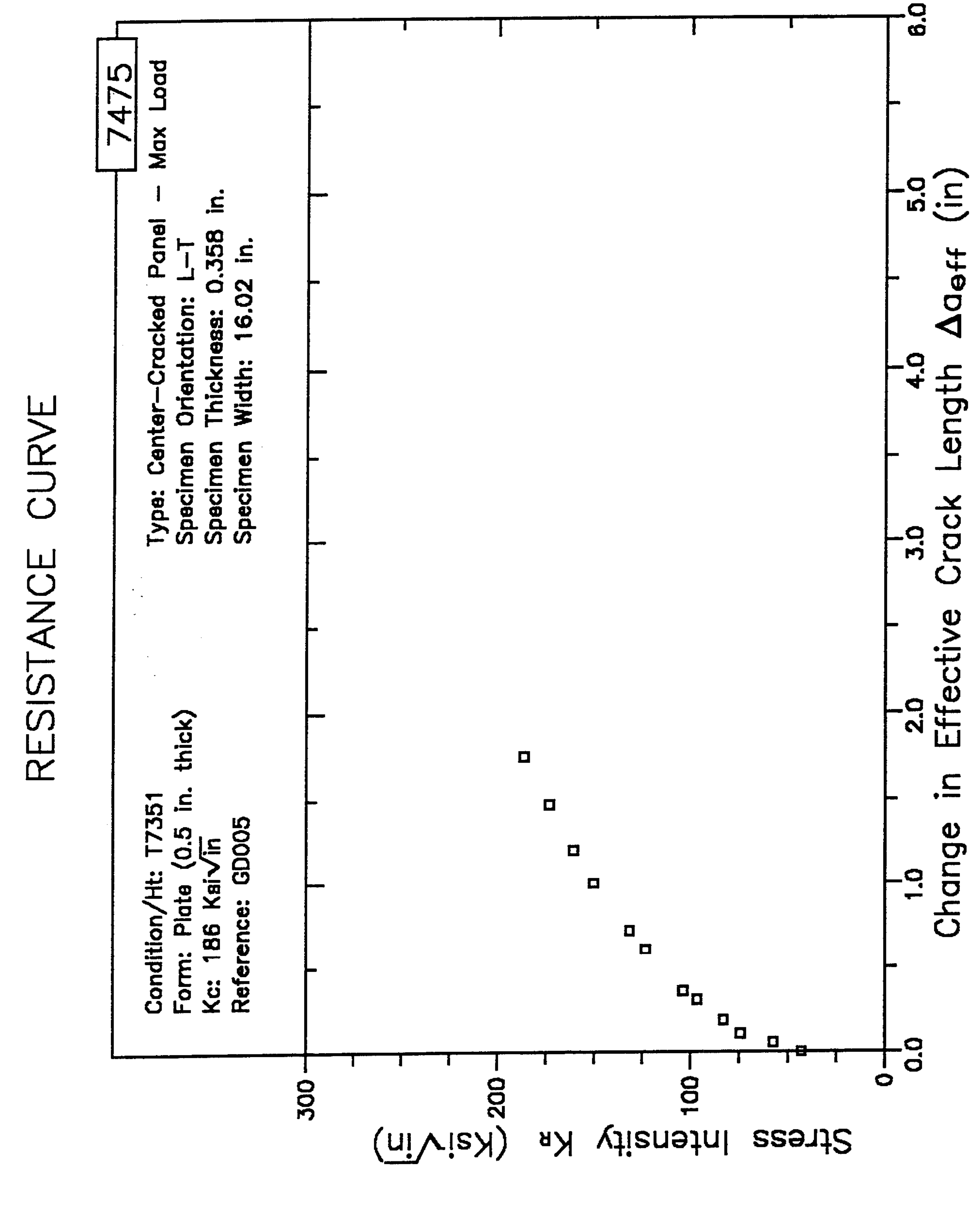

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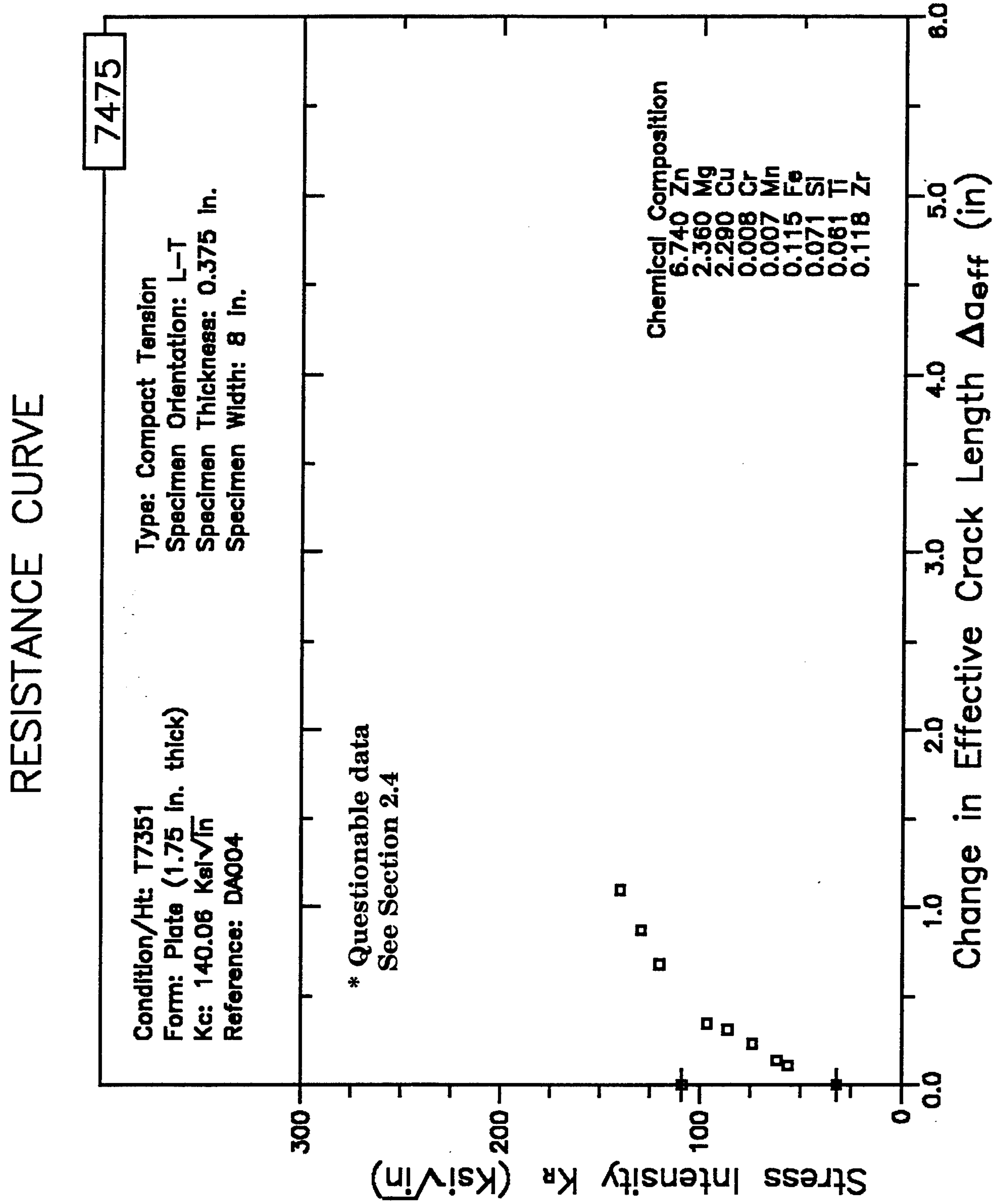

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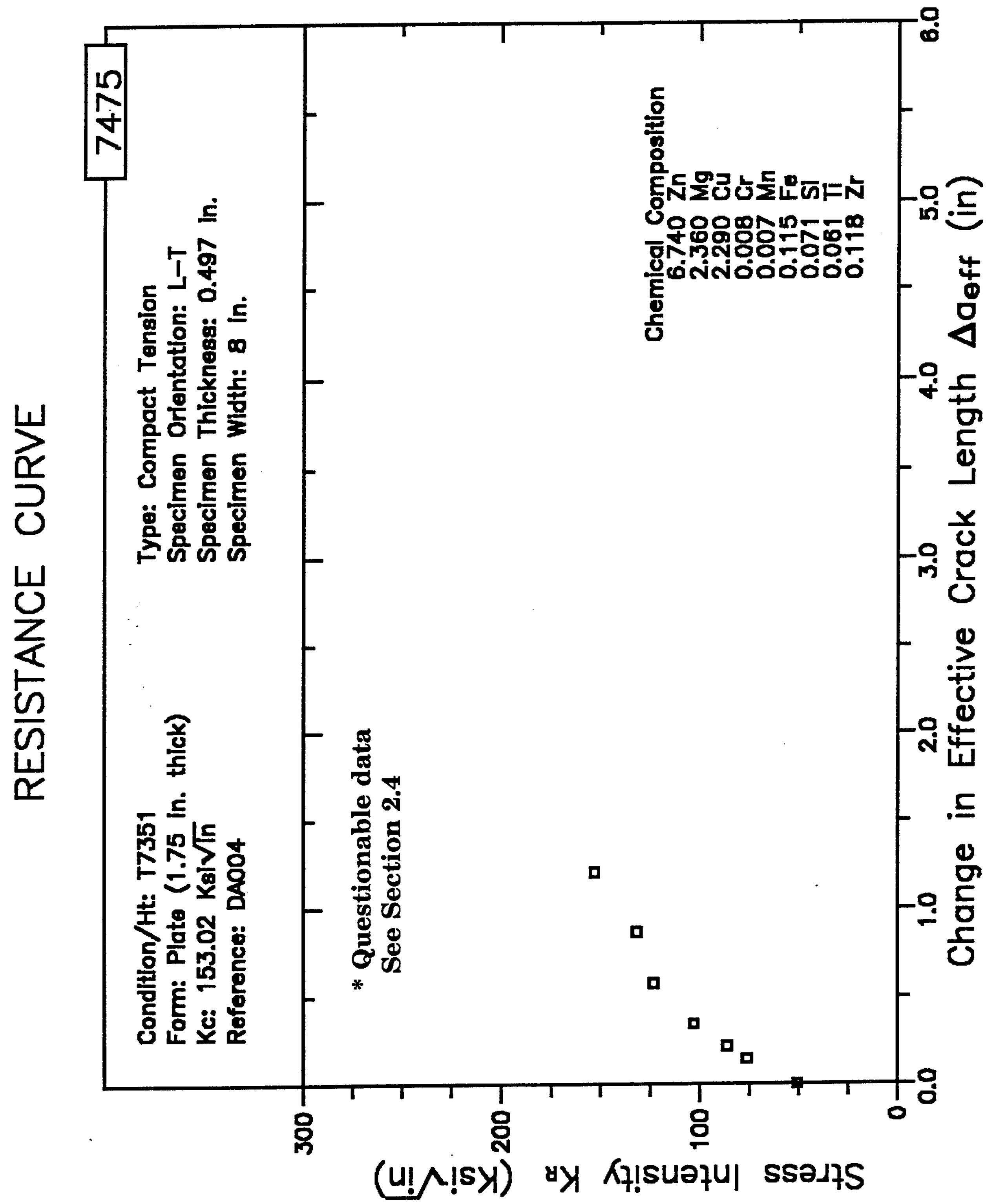

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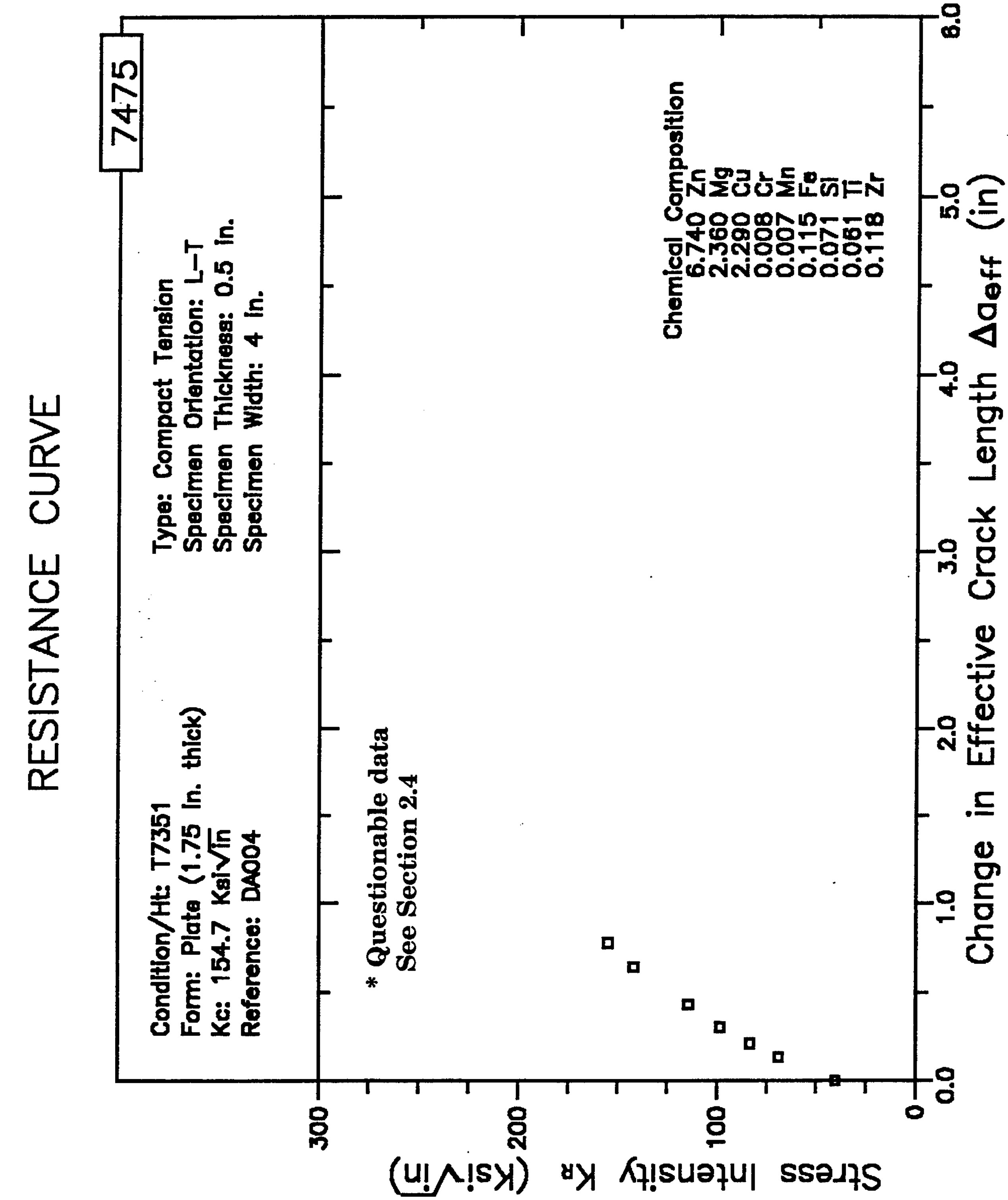

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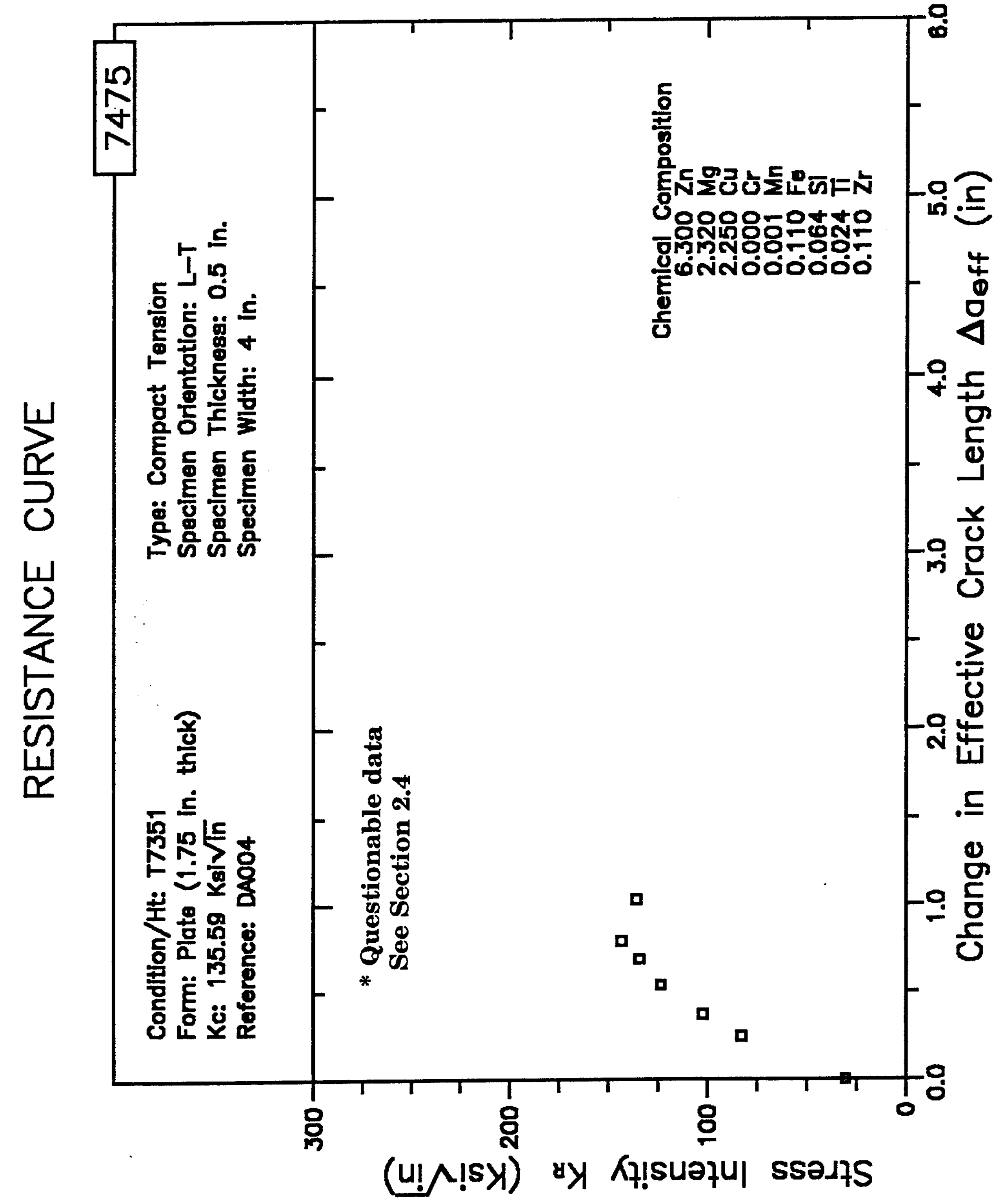

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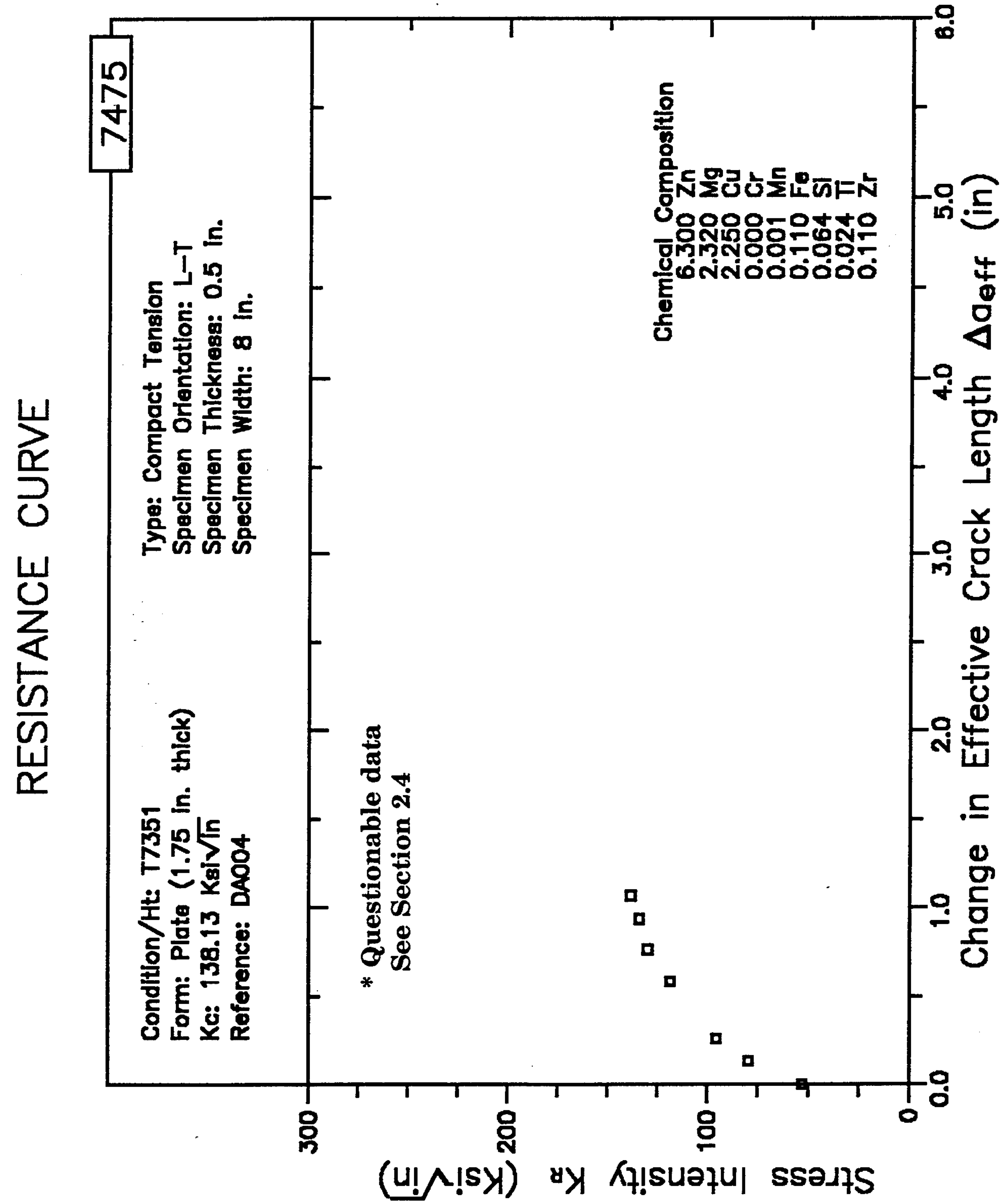

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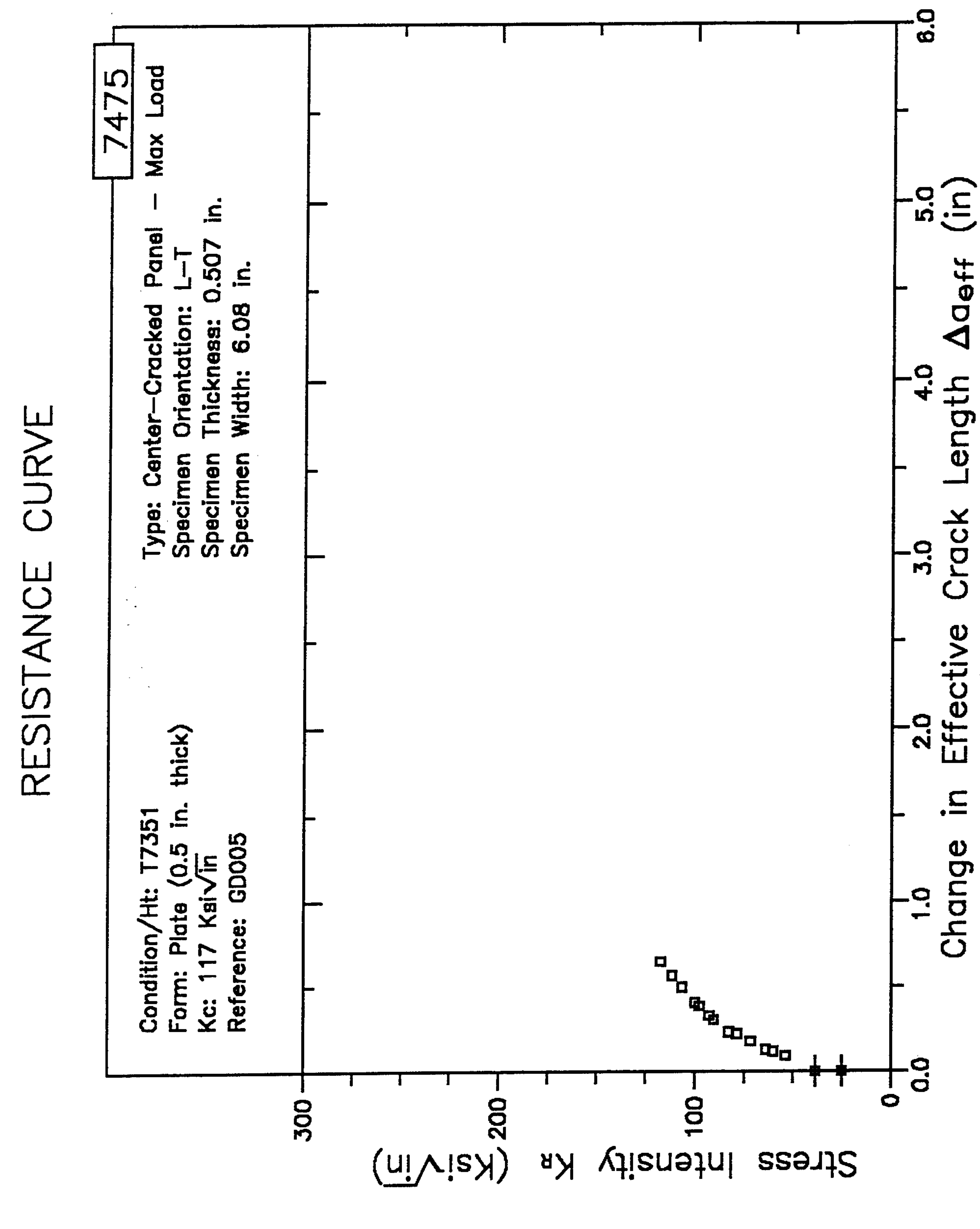

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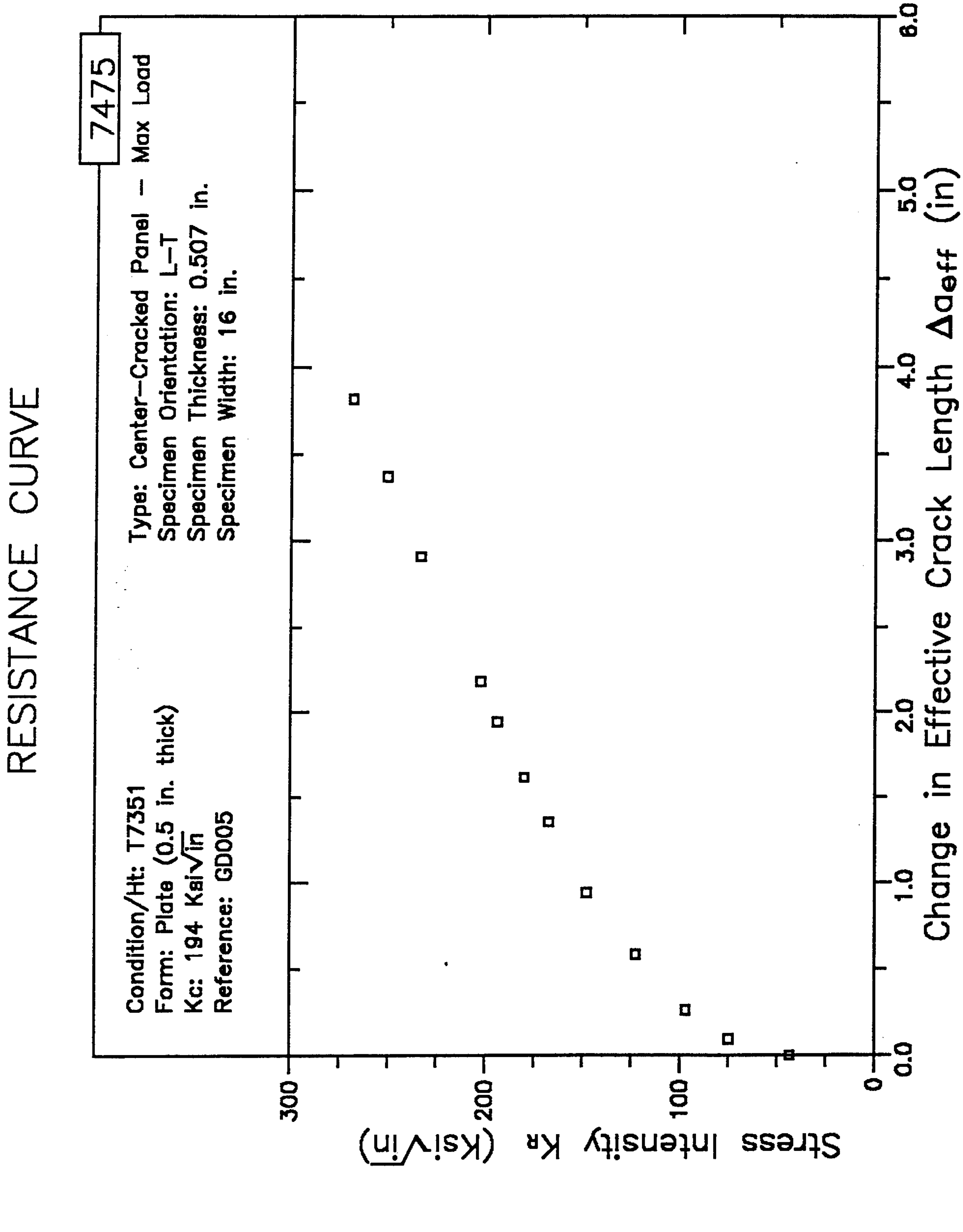

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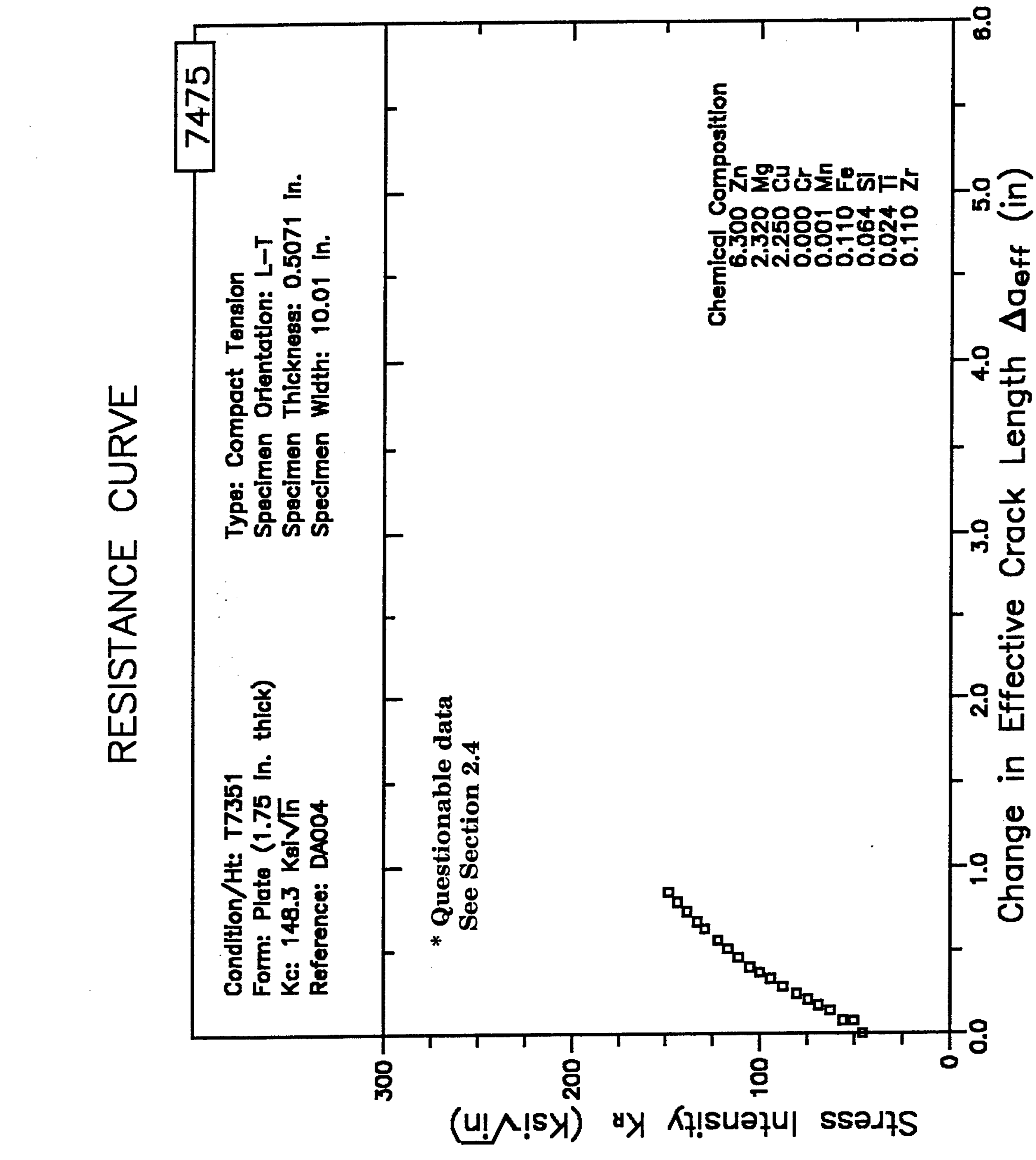

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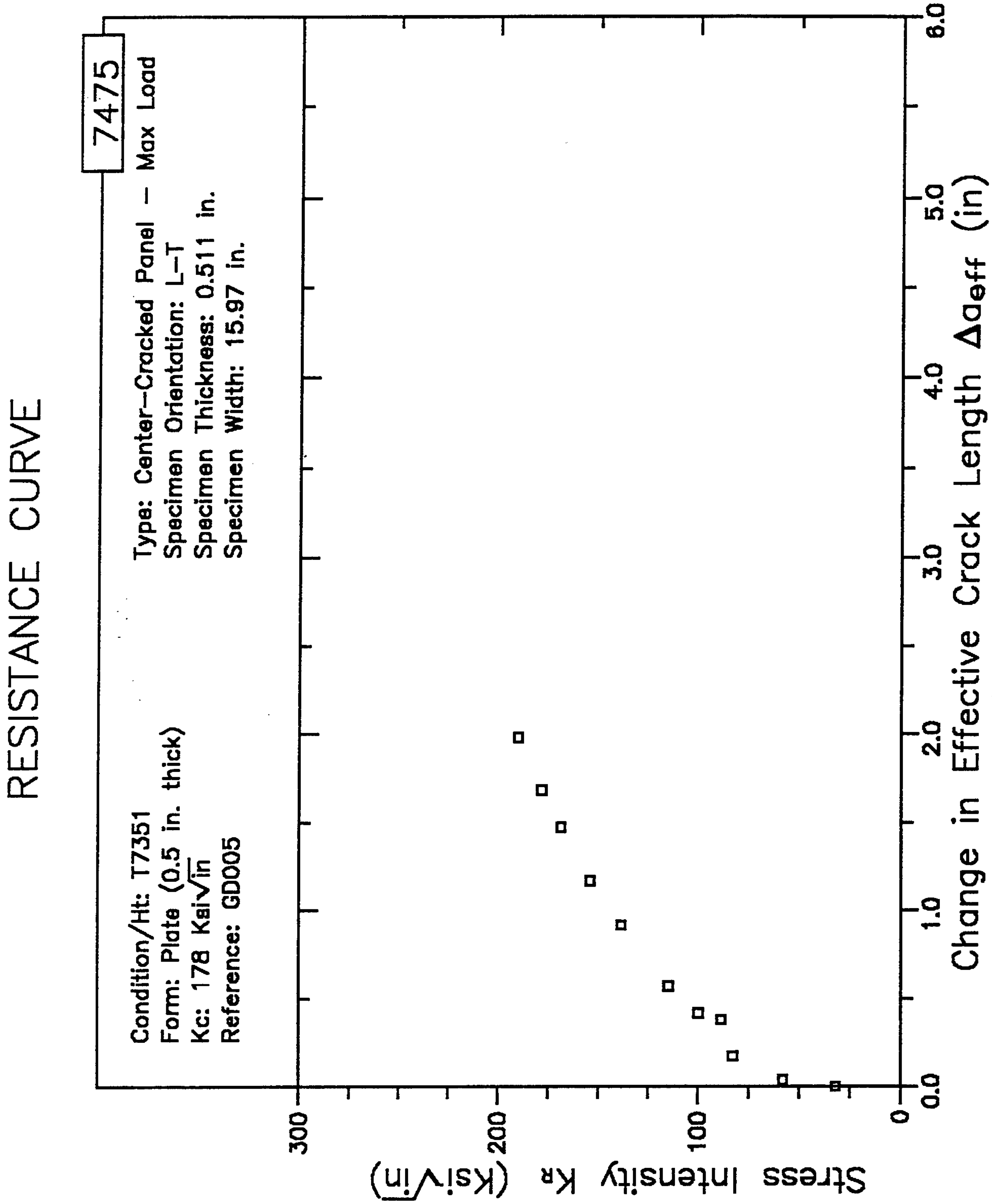

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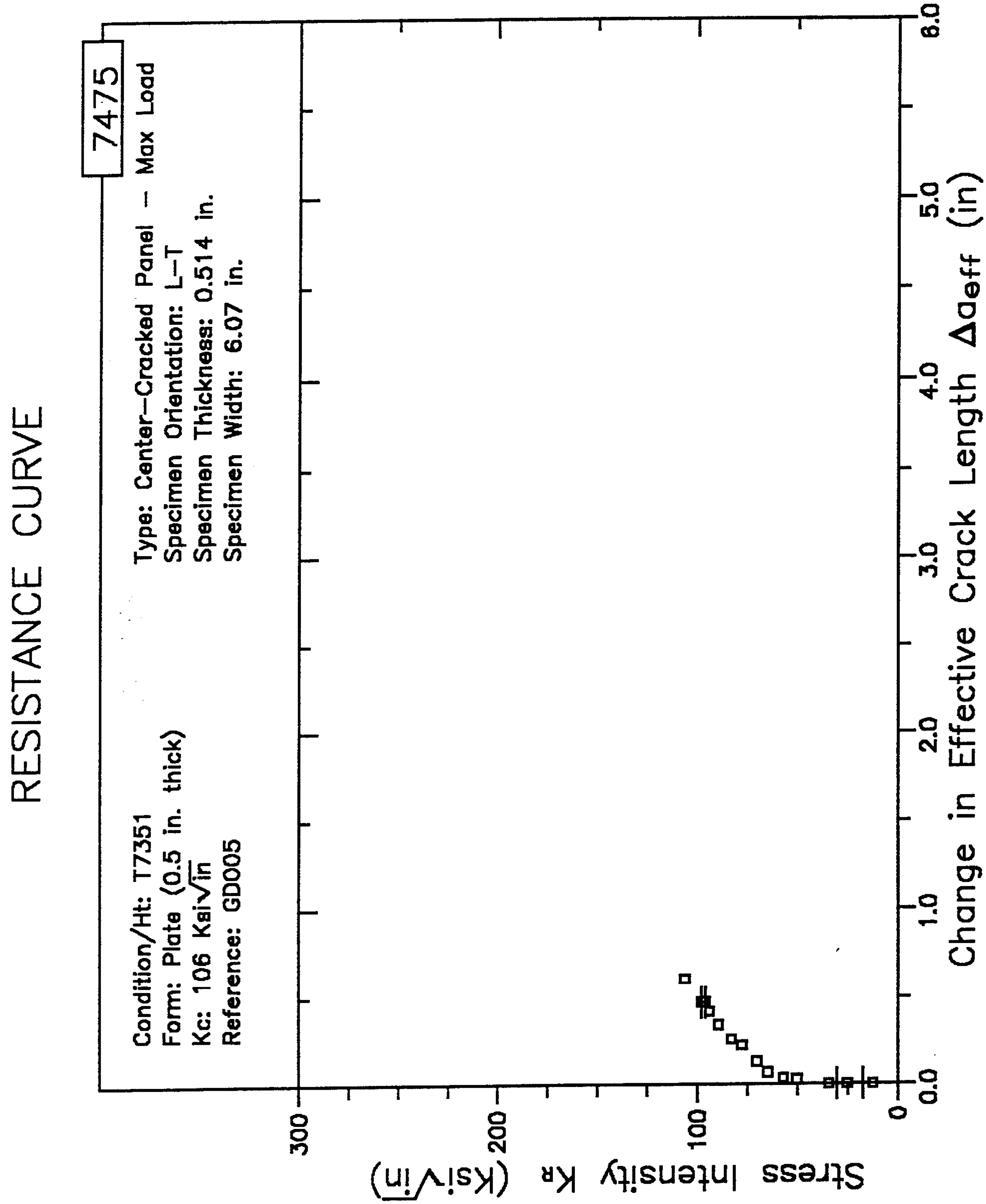

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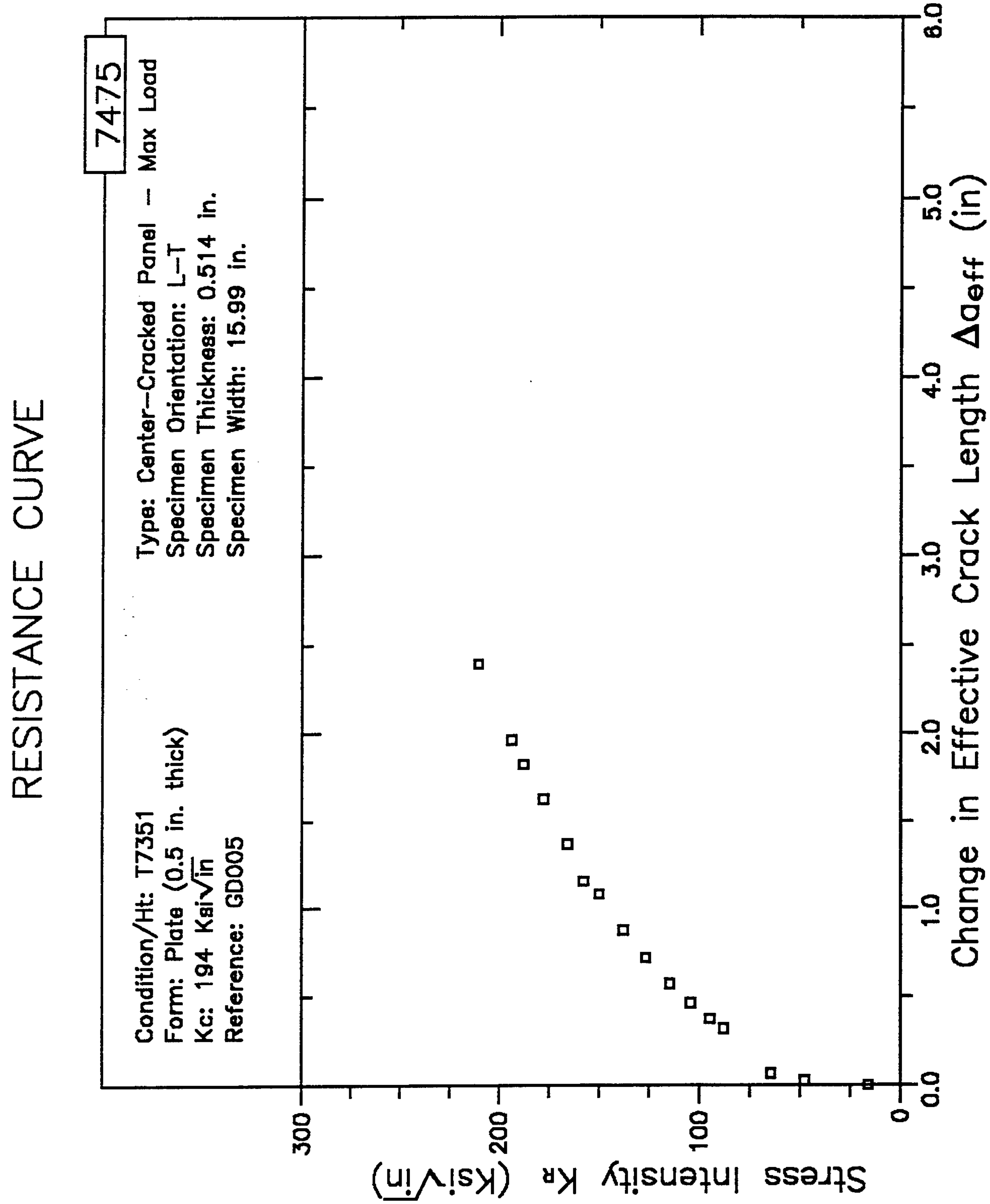

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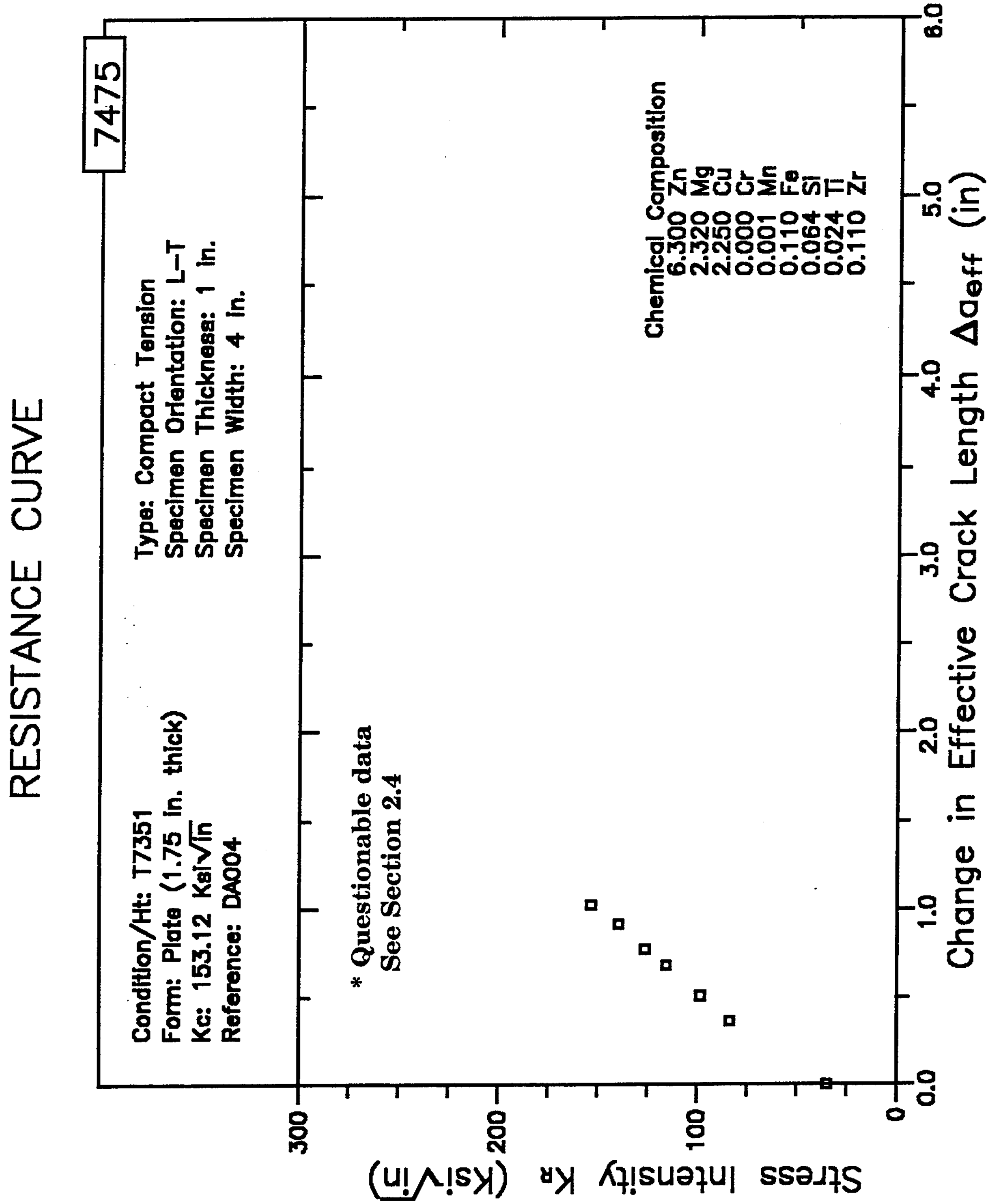

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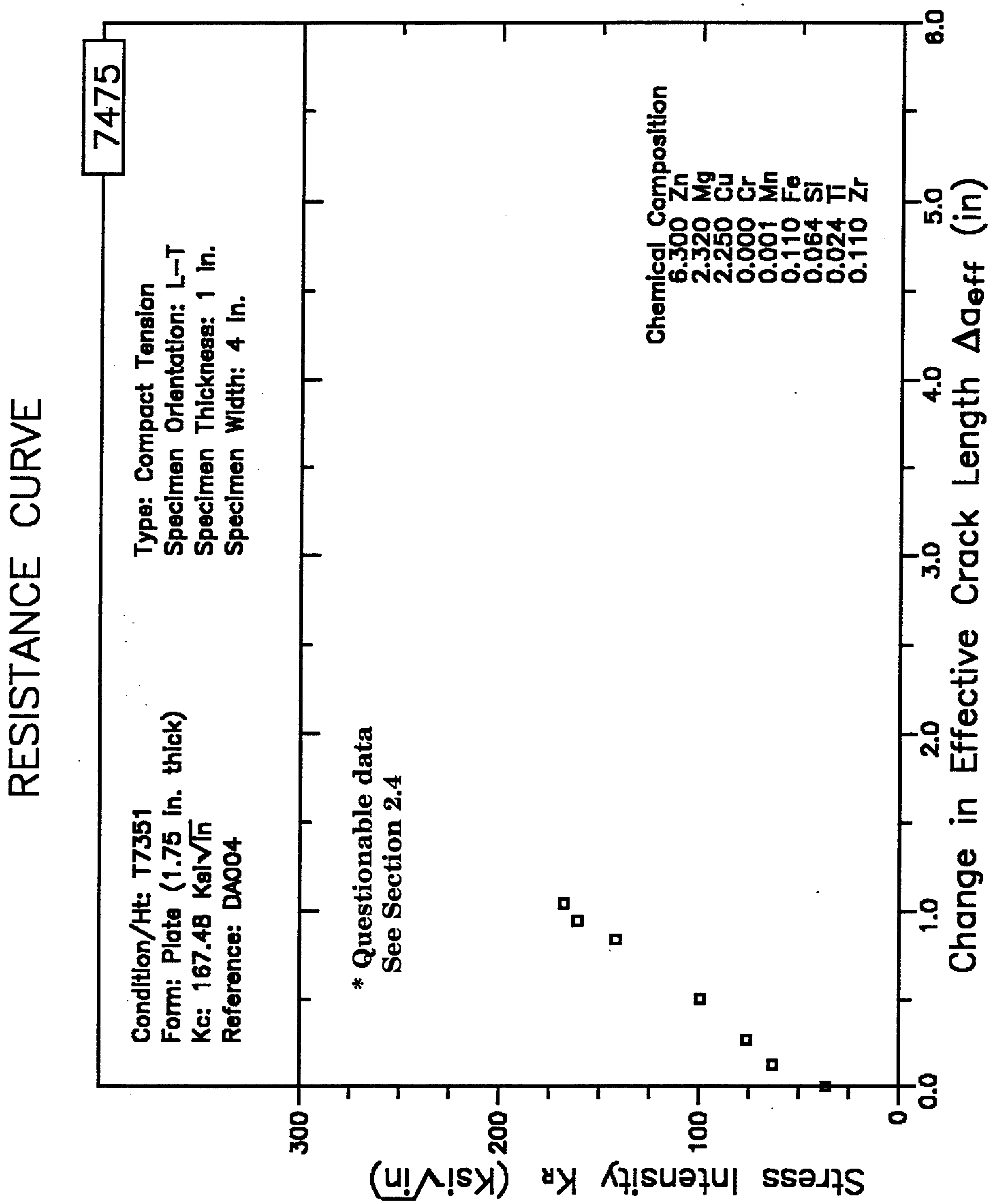

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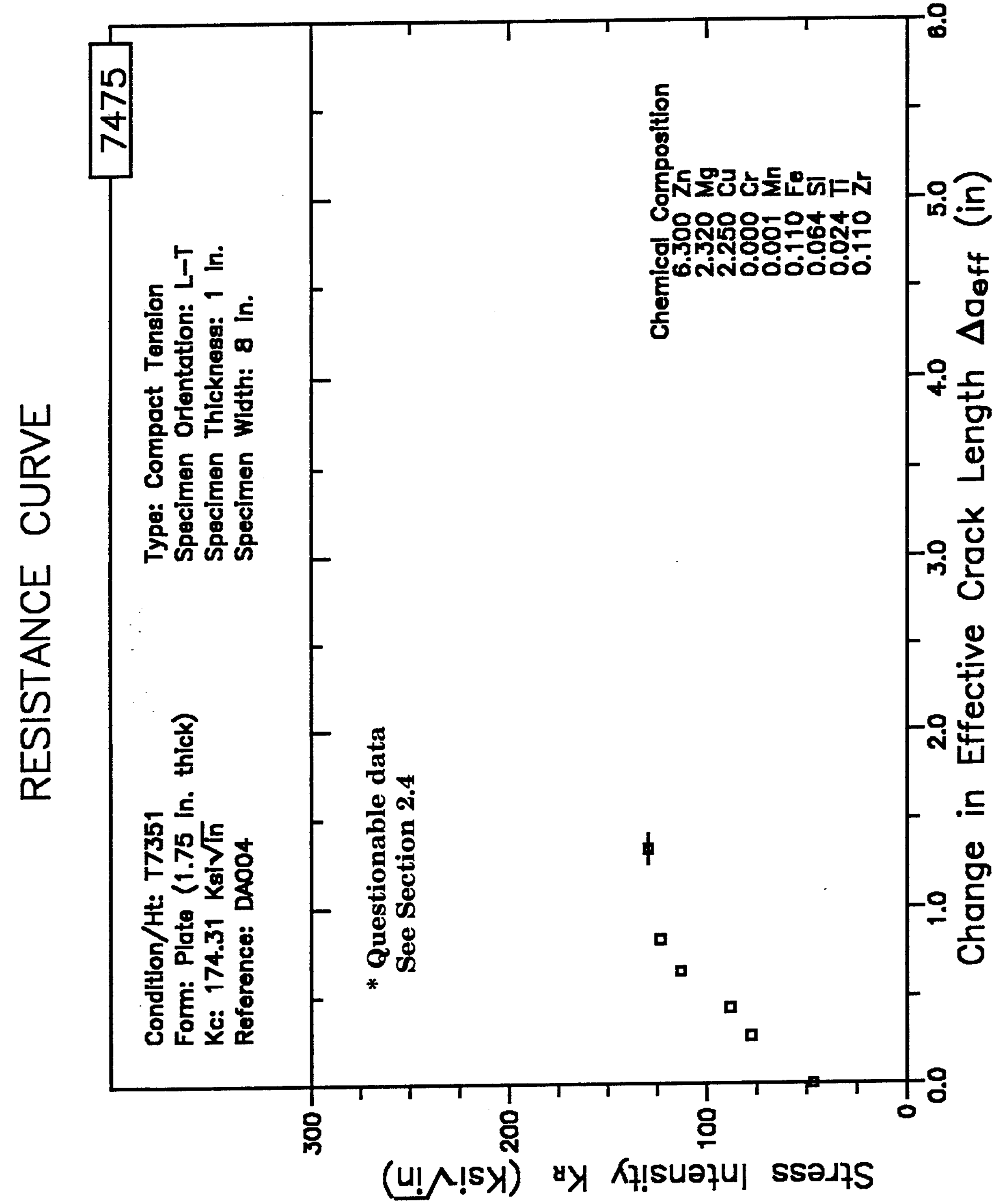

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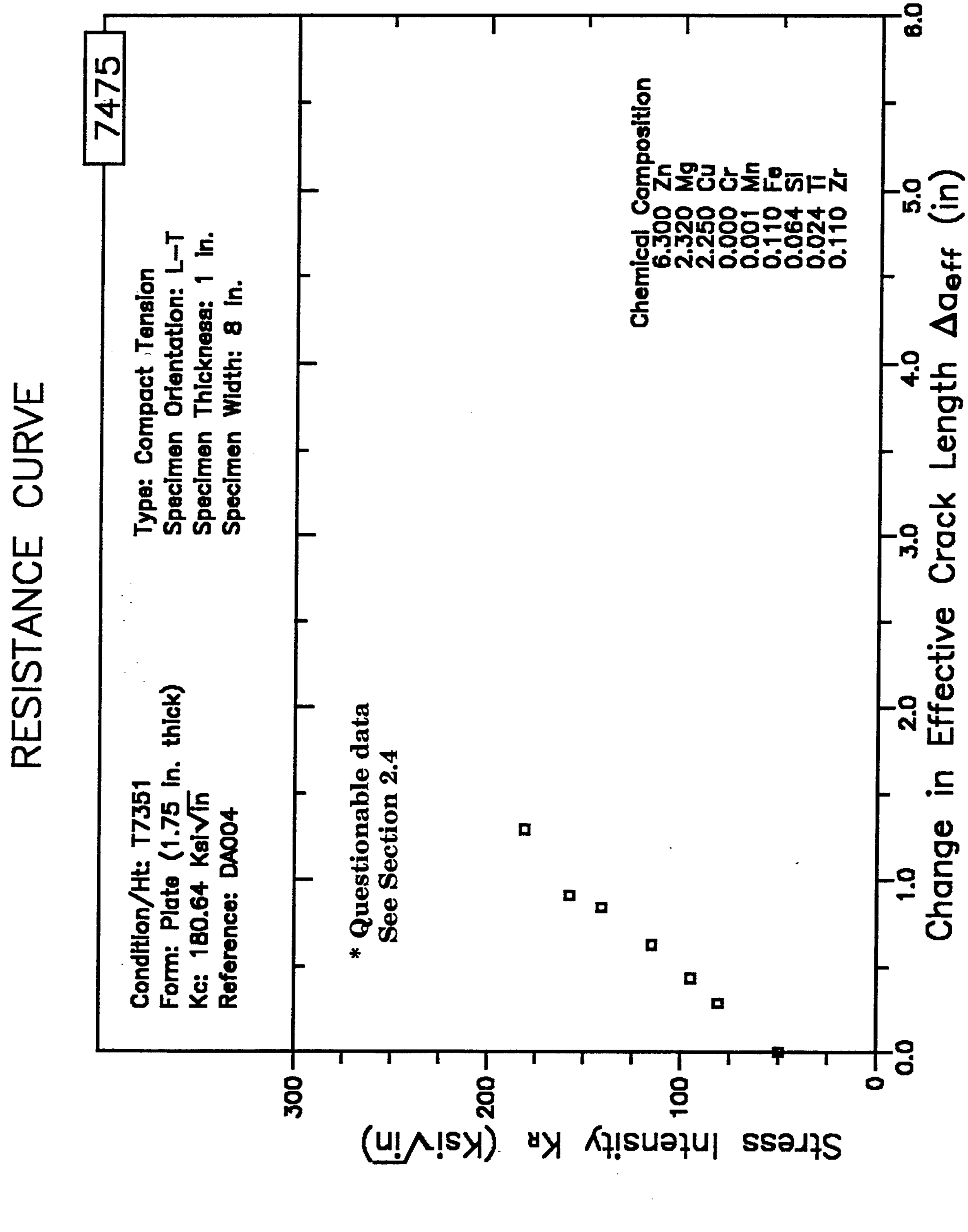

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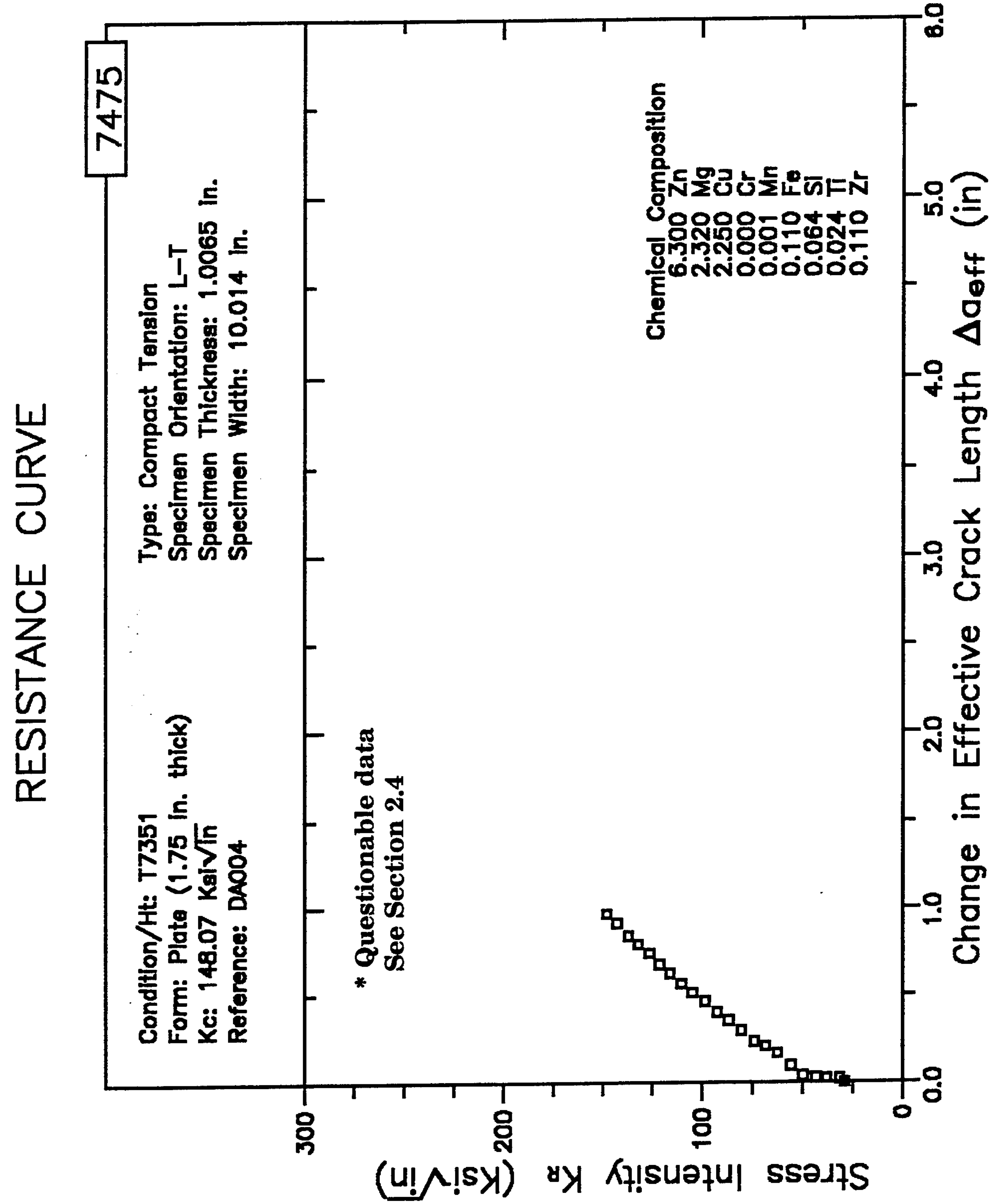

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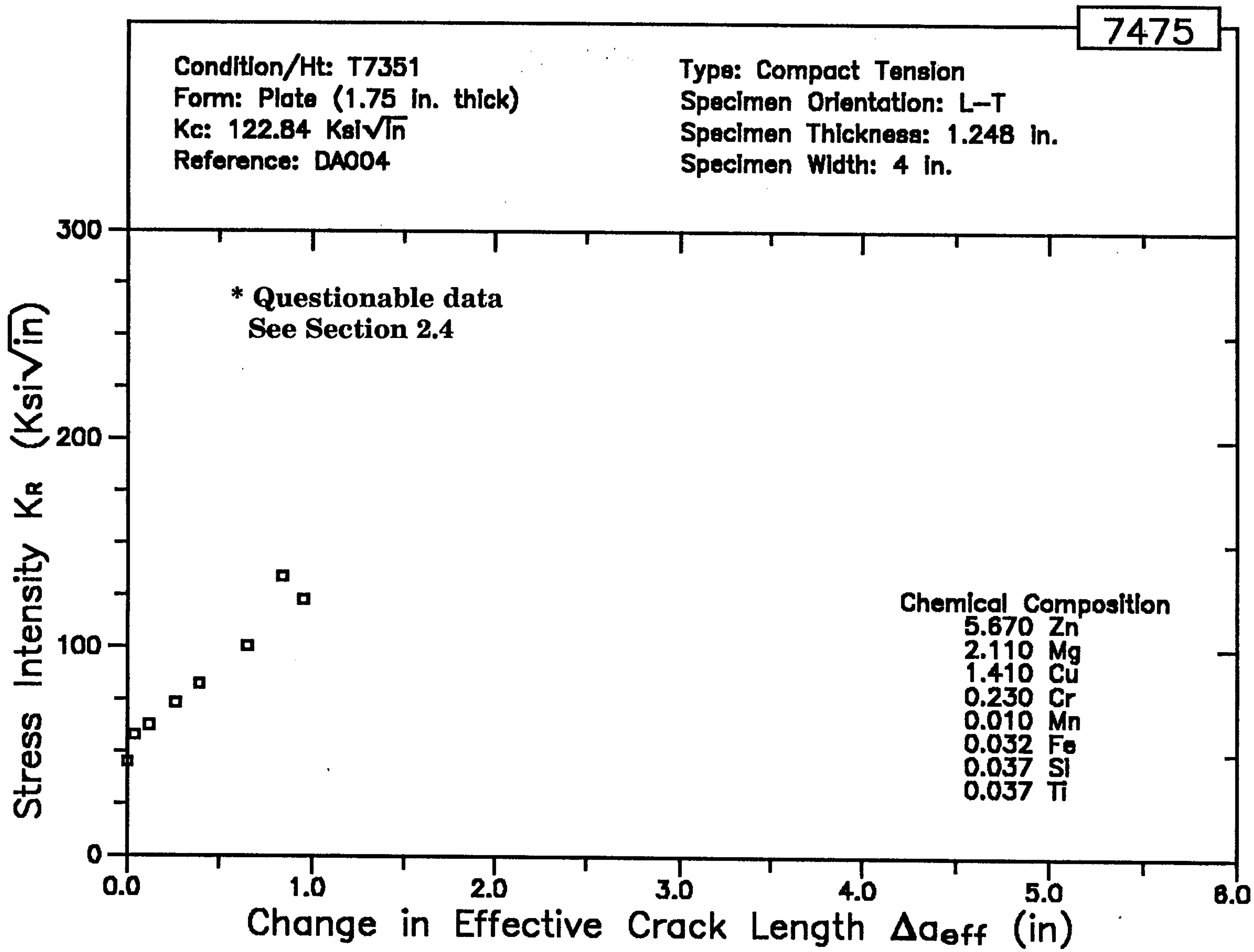
RESISTANCE CURVE



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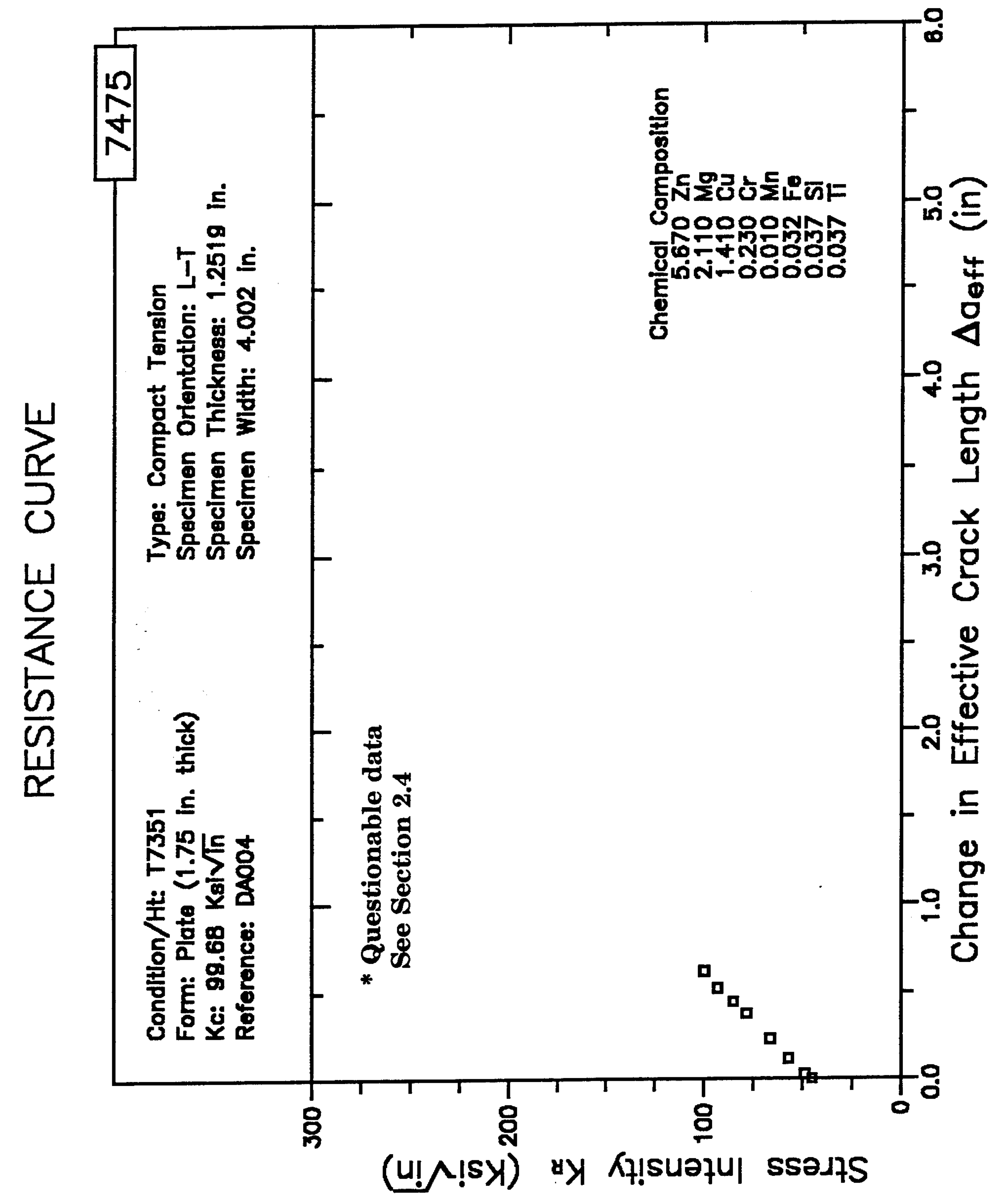

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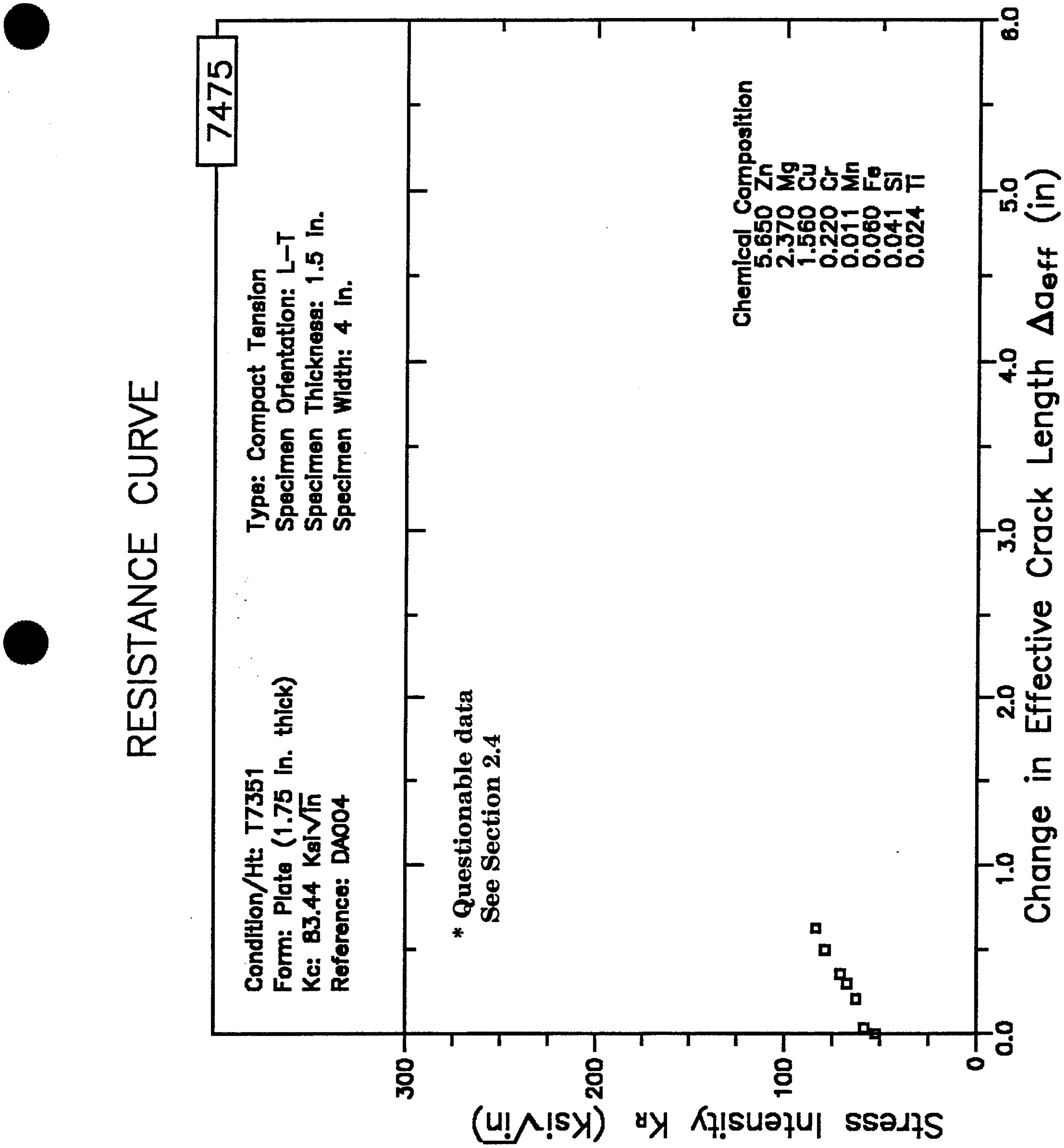

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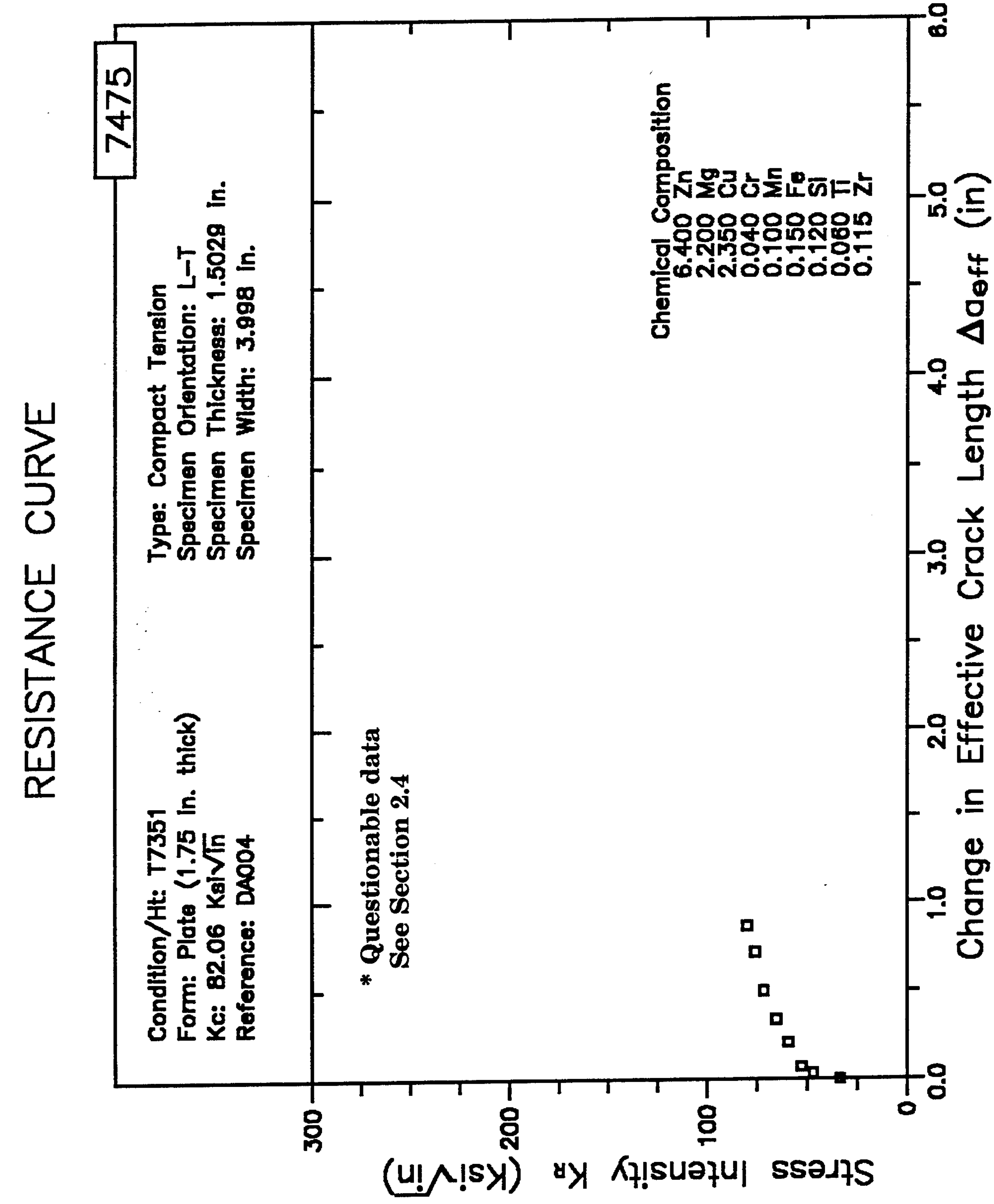

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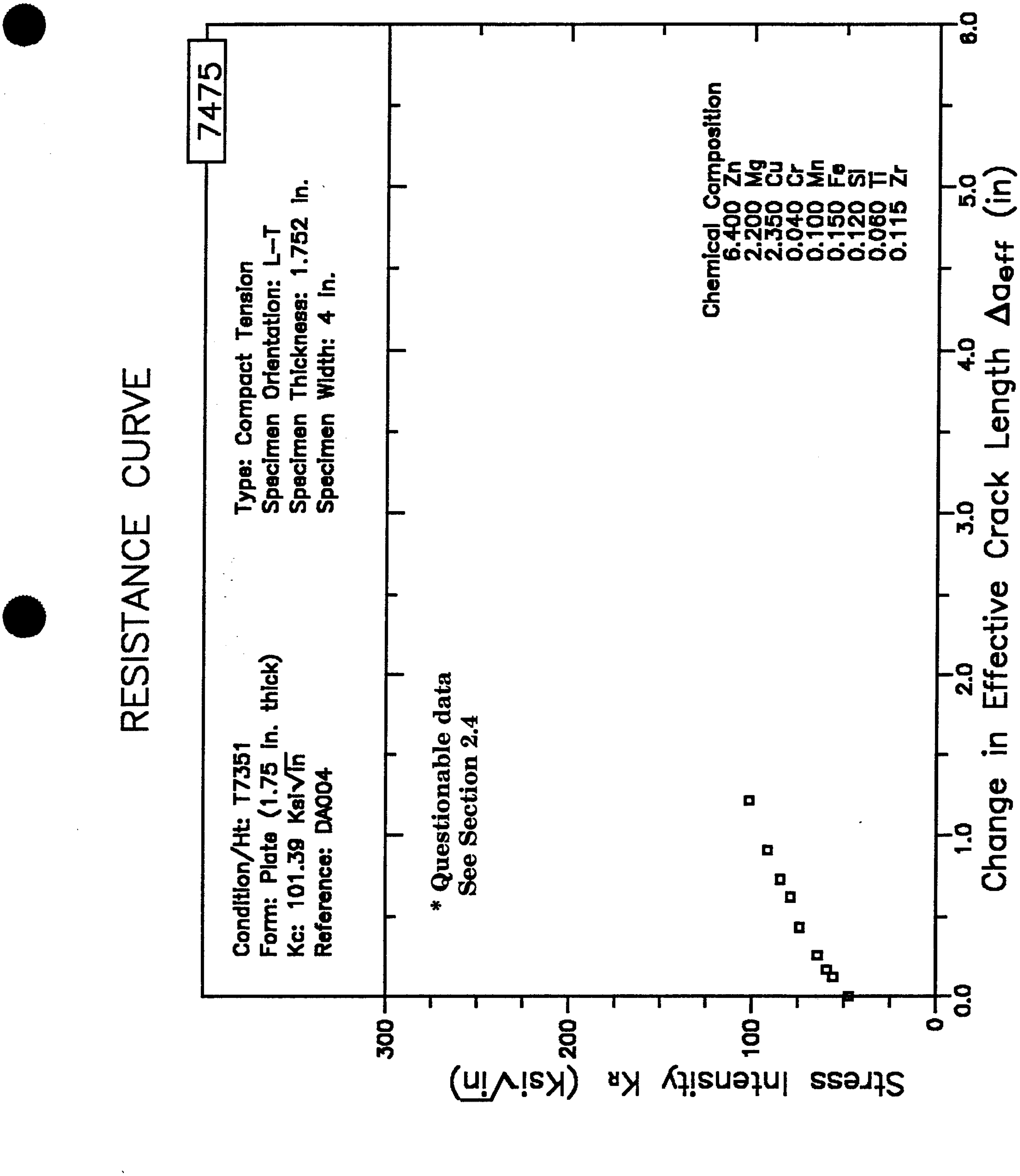

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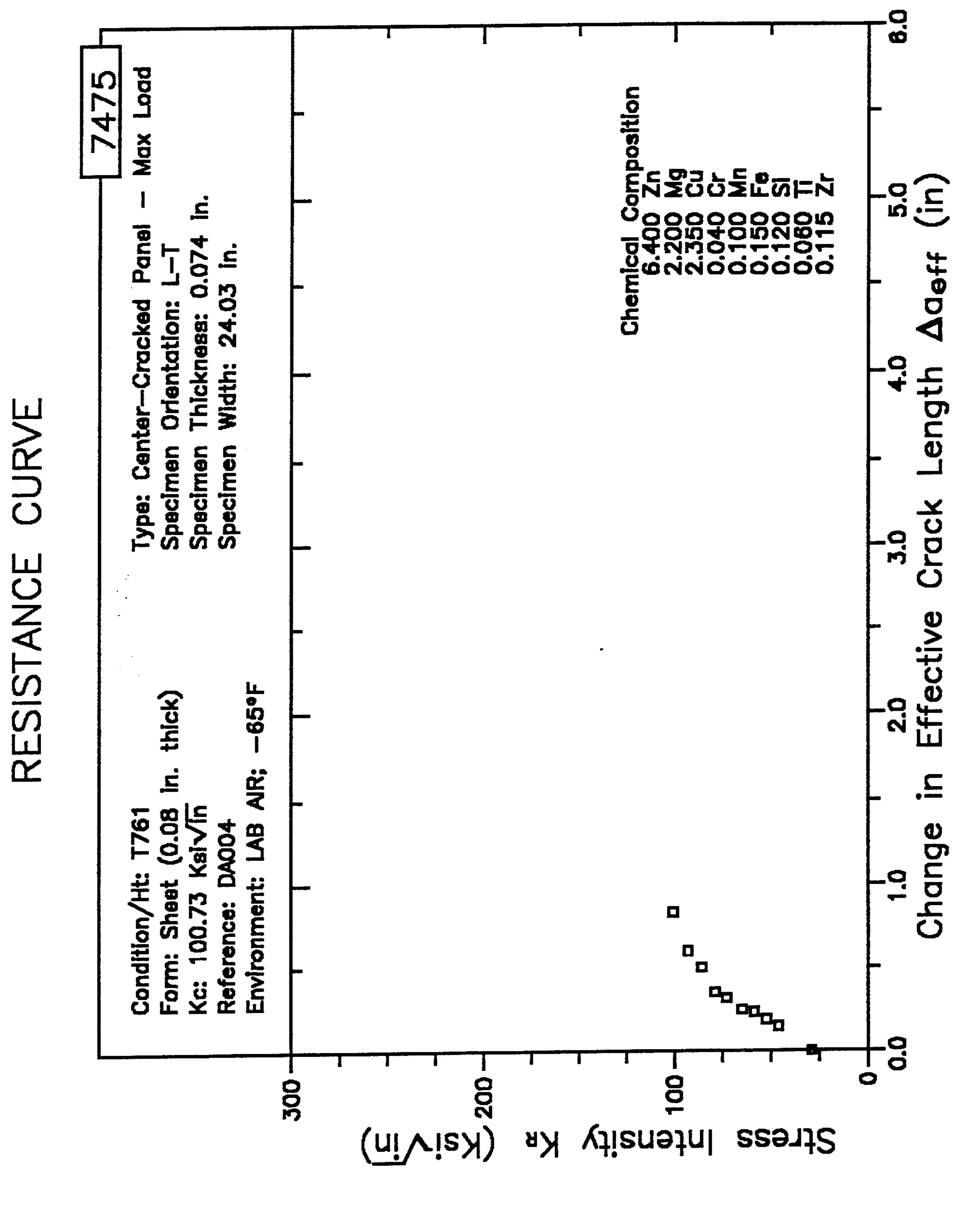

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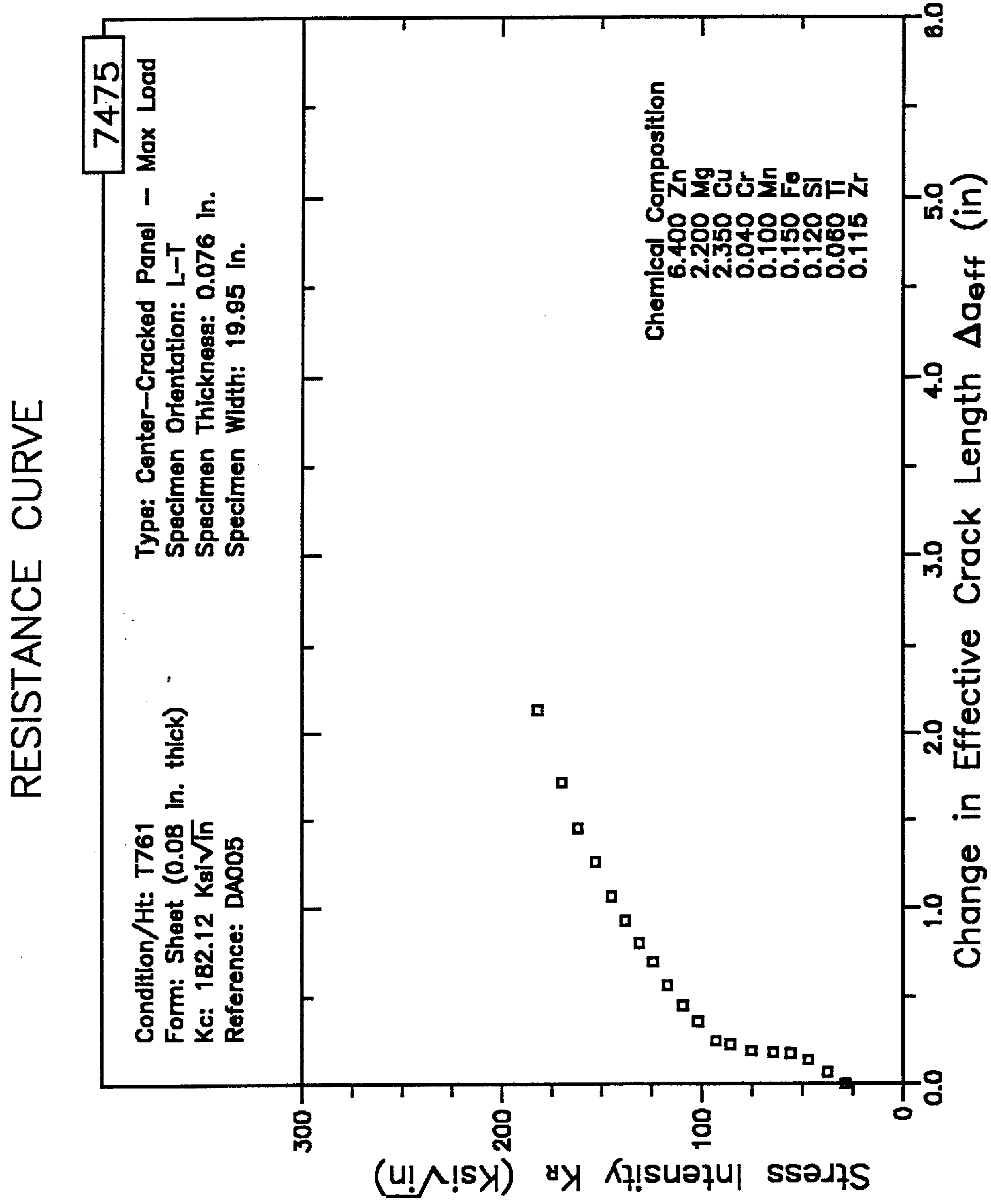

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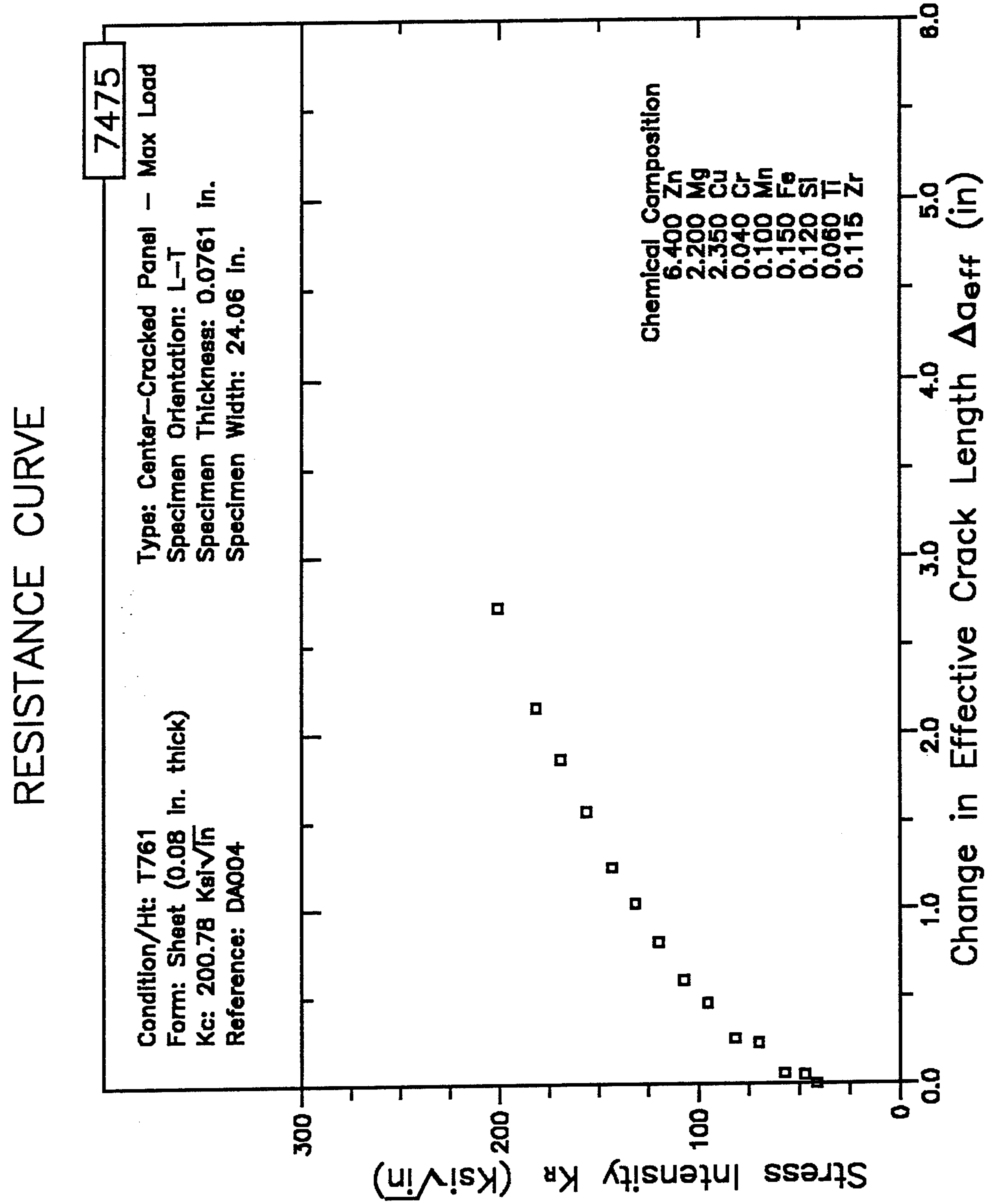

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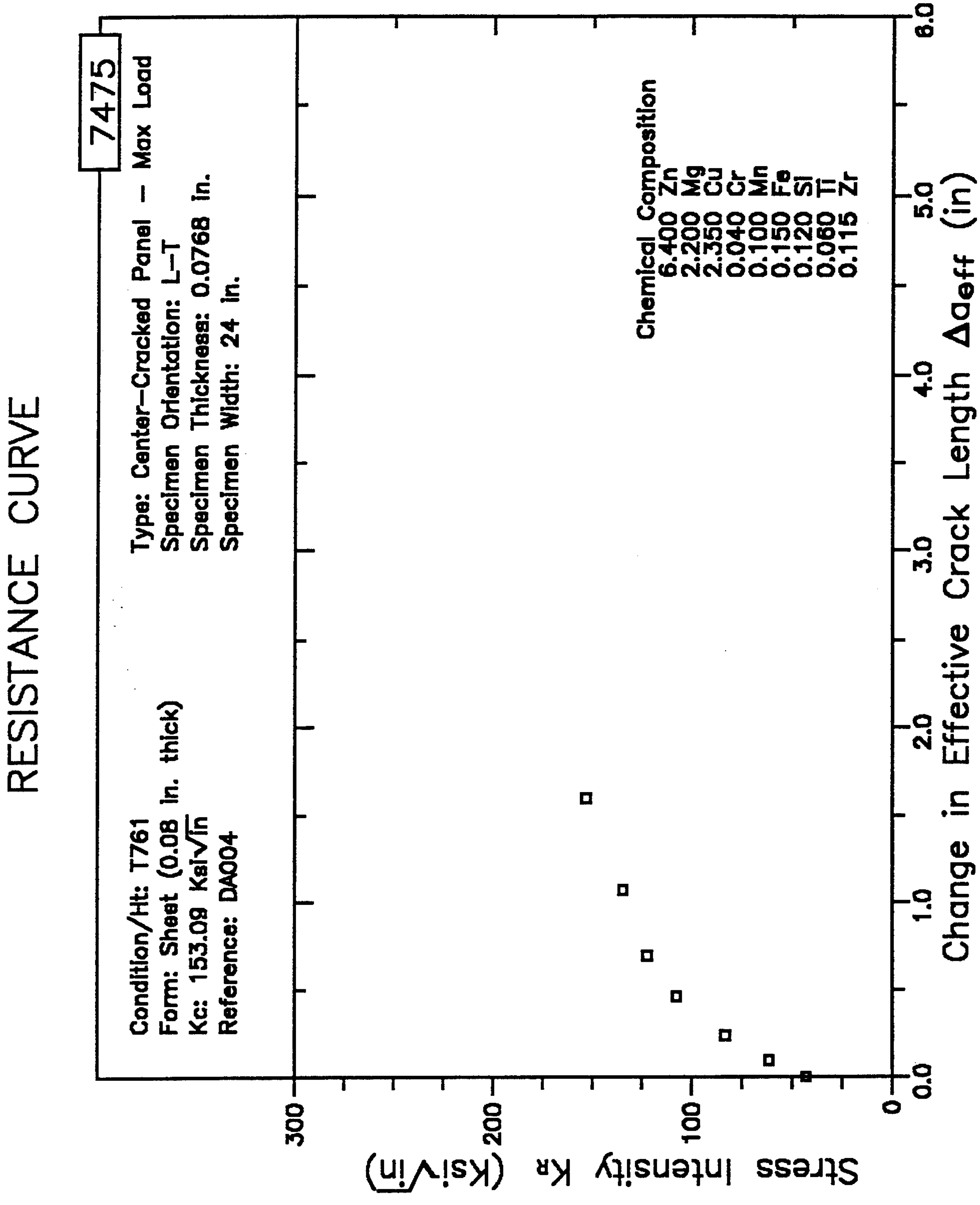

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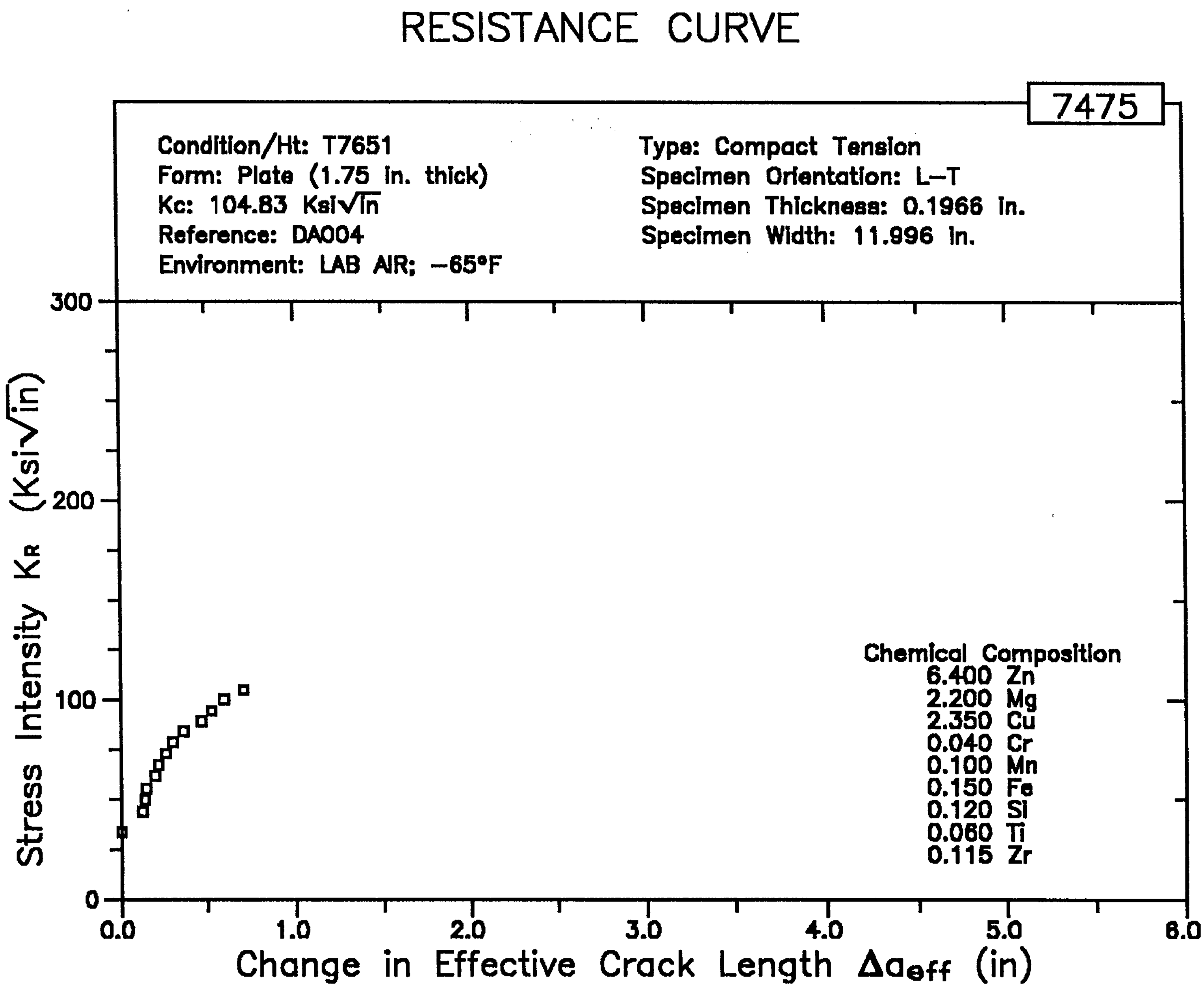

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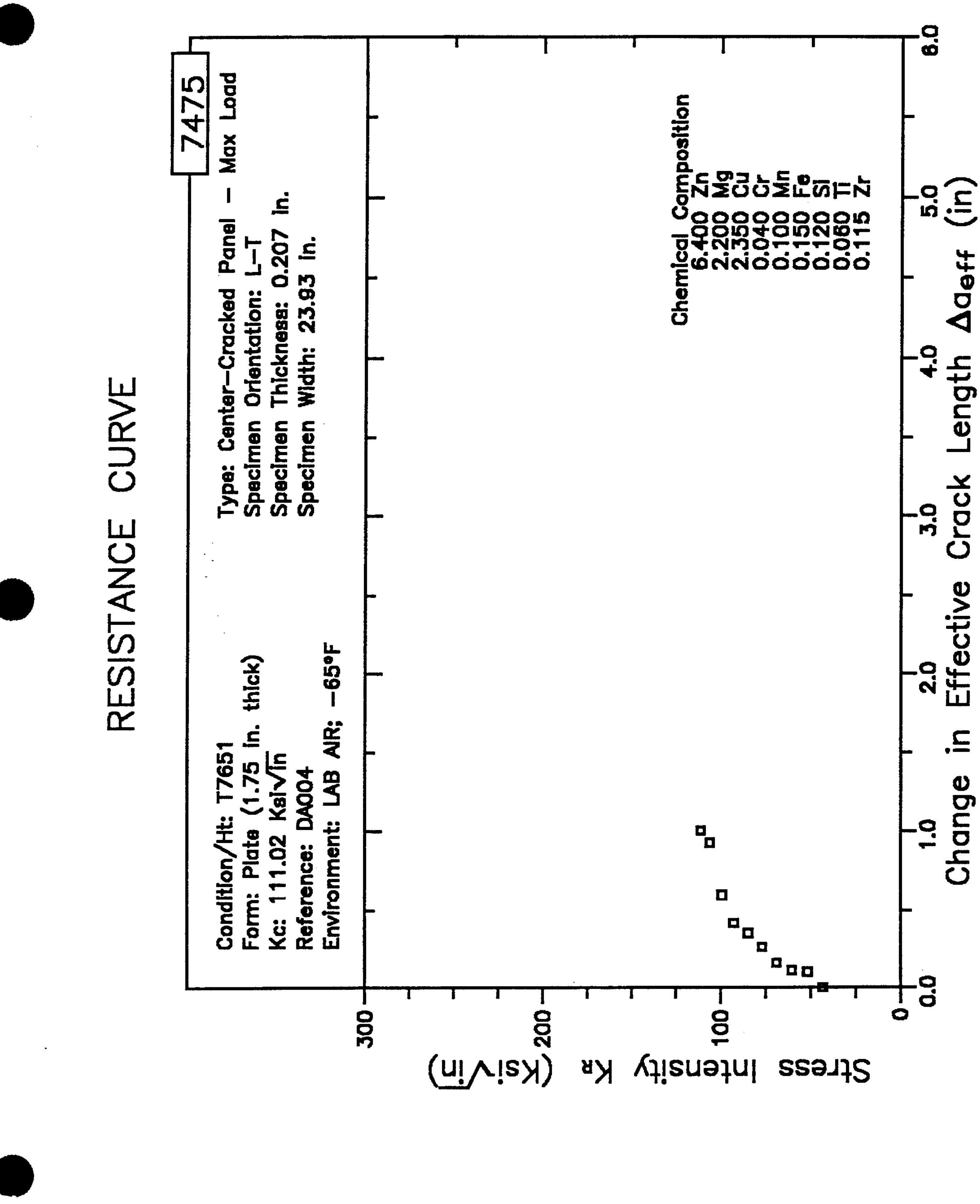

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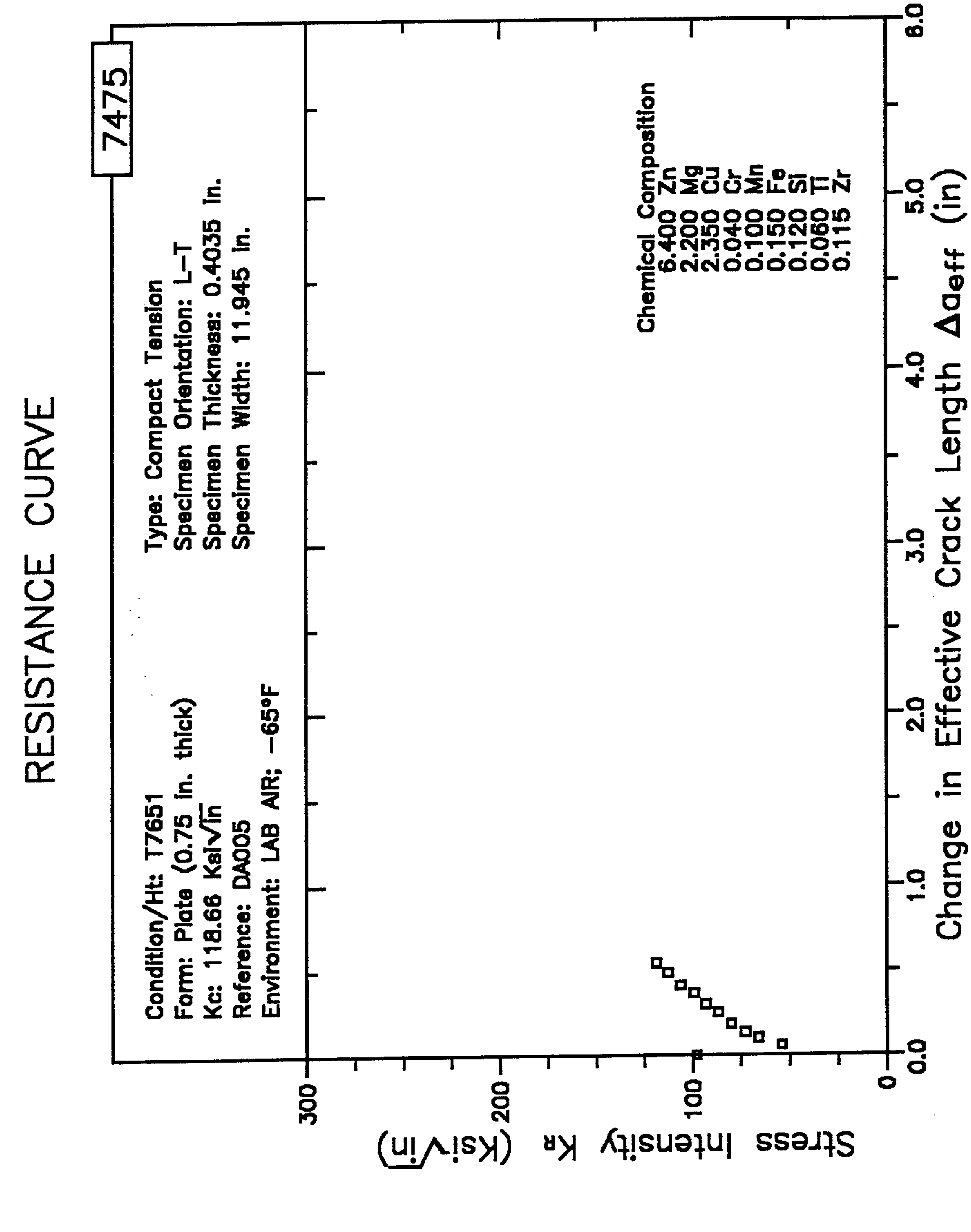

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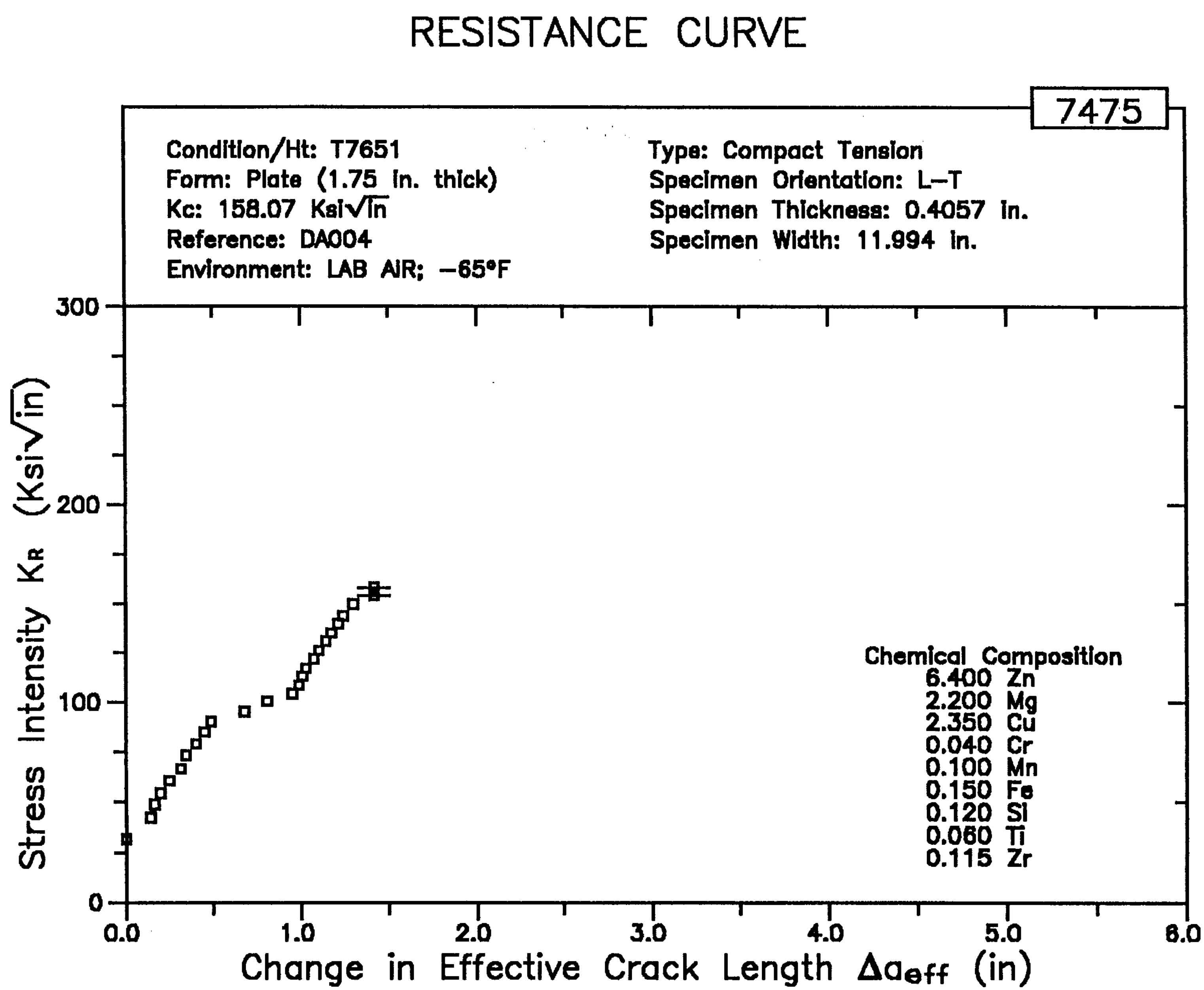

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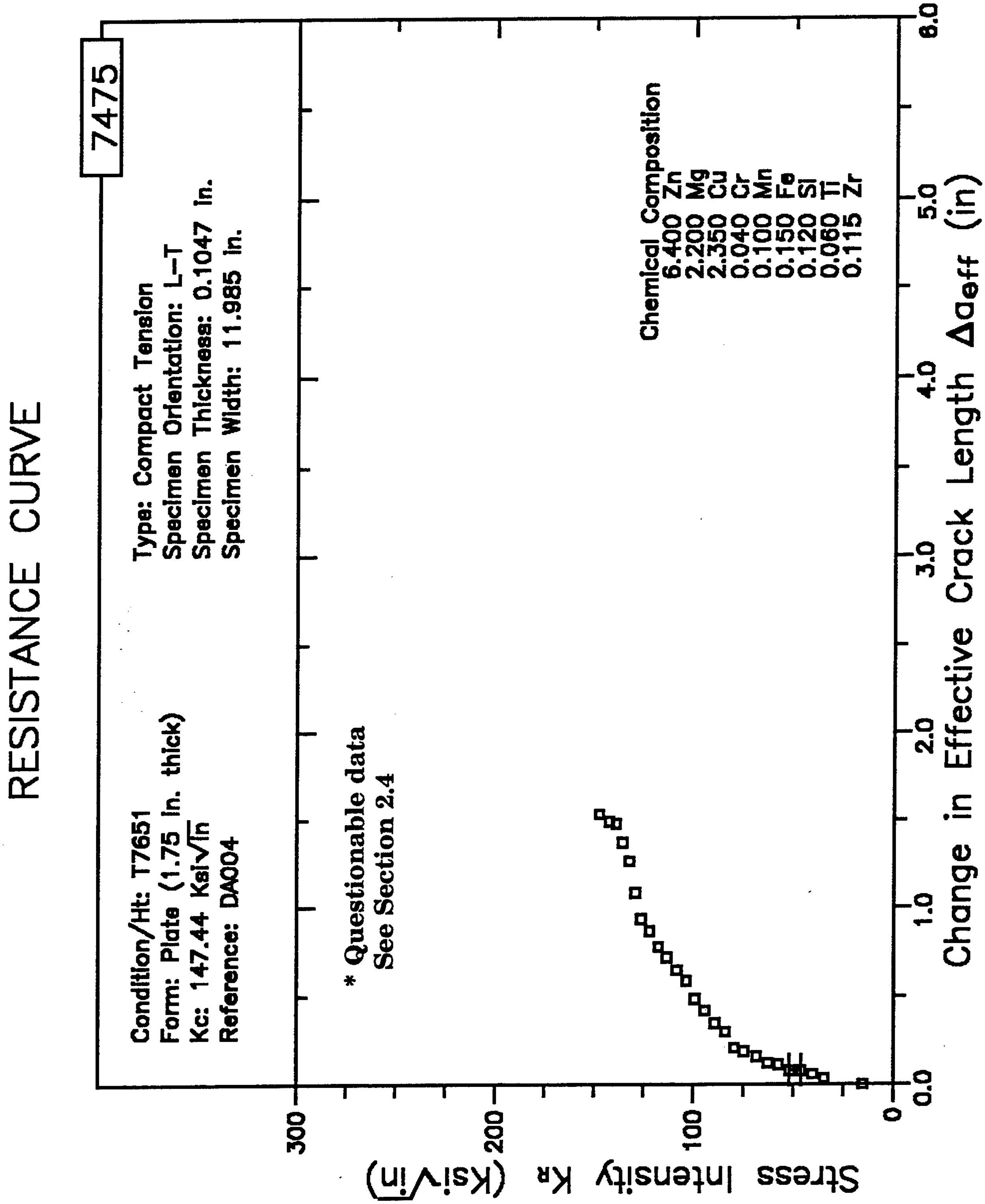

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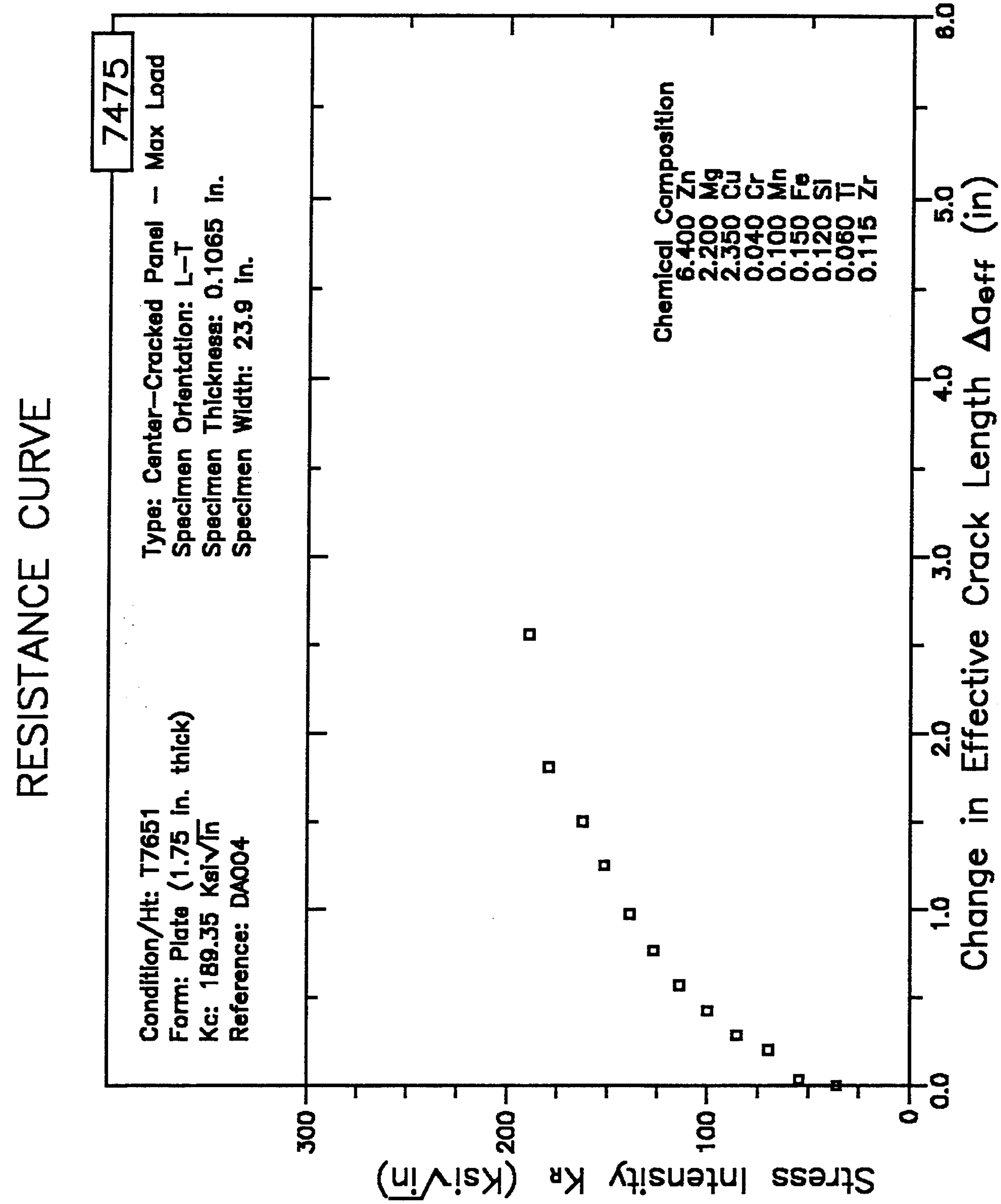

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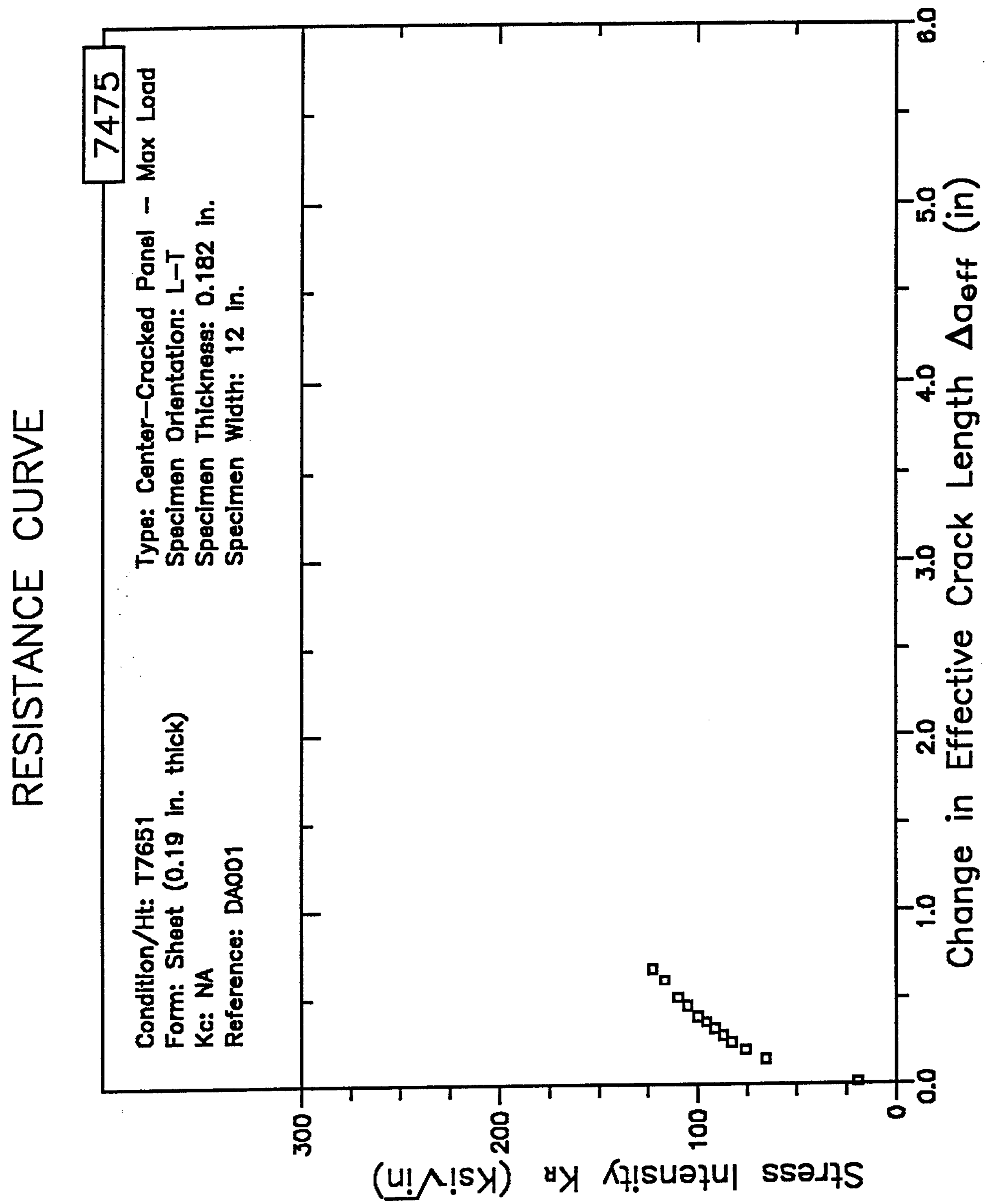

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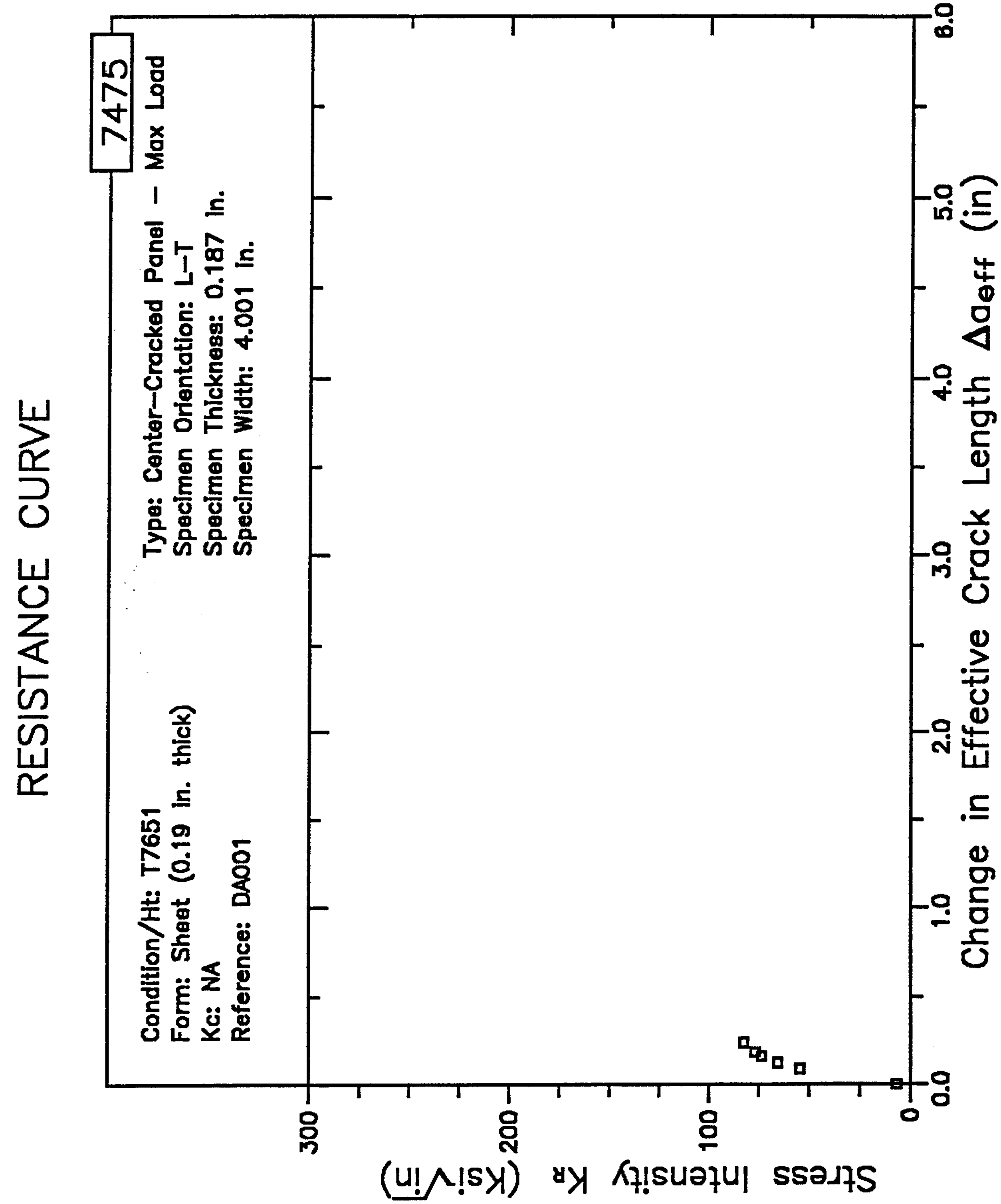

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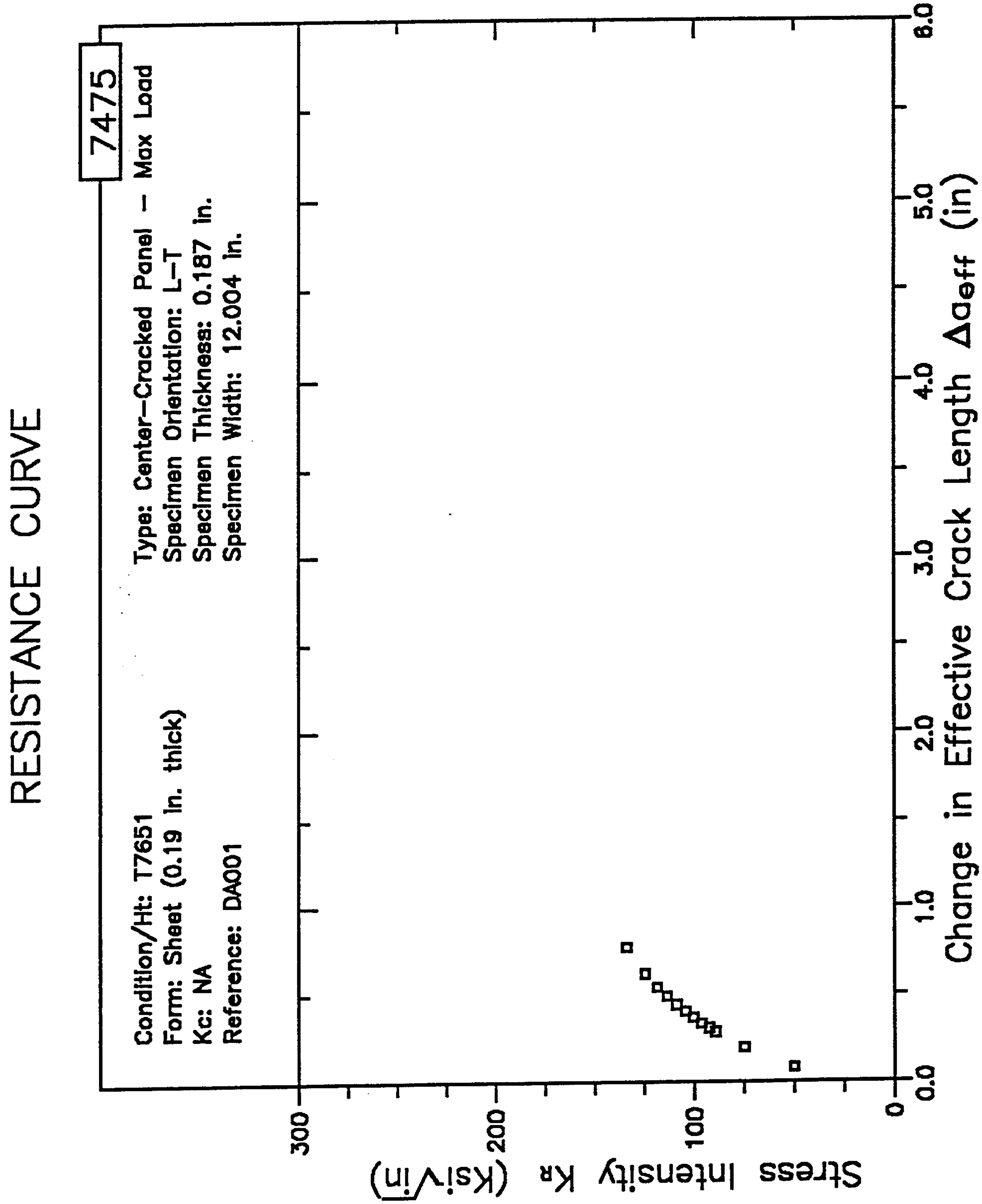

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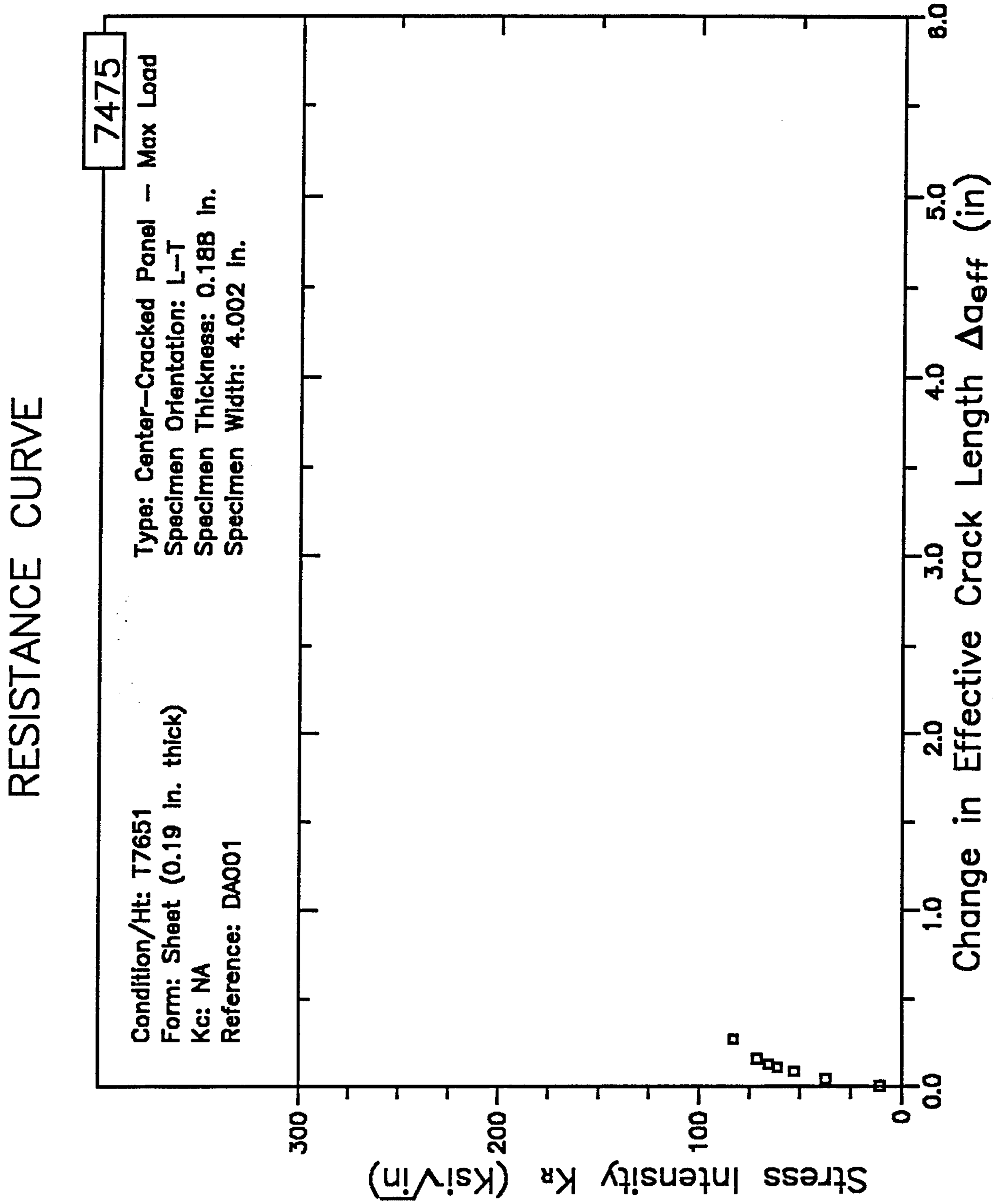

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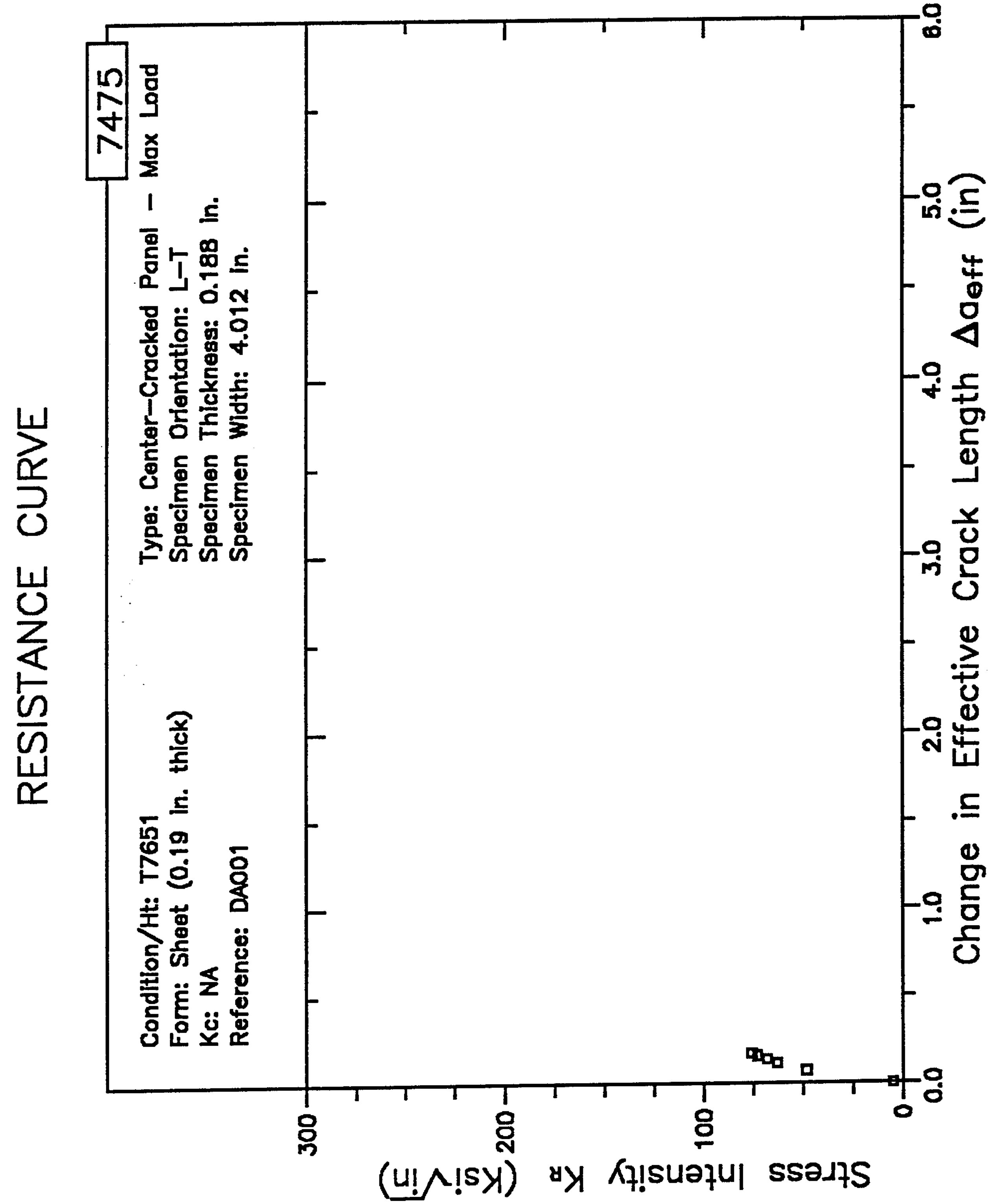

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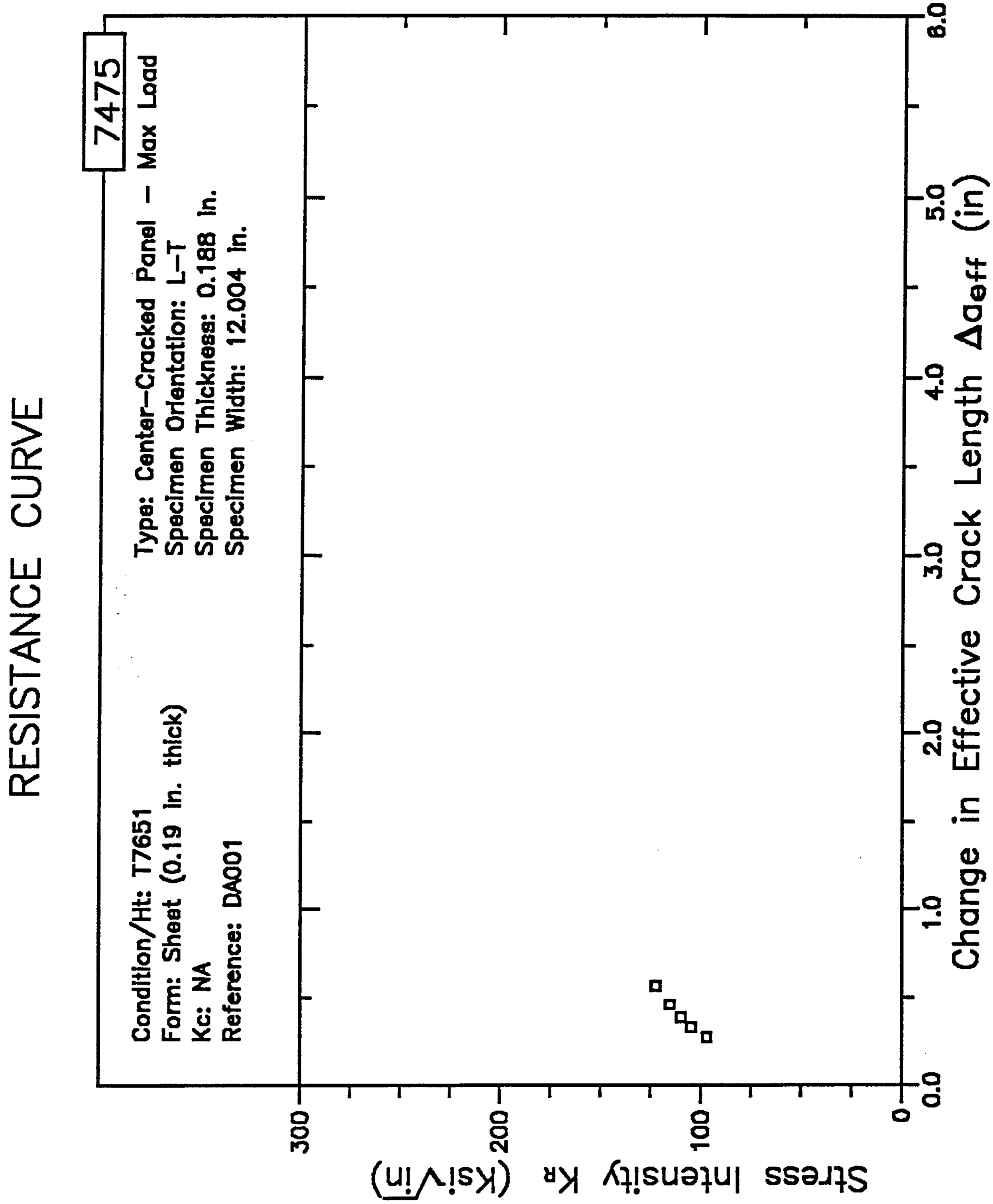

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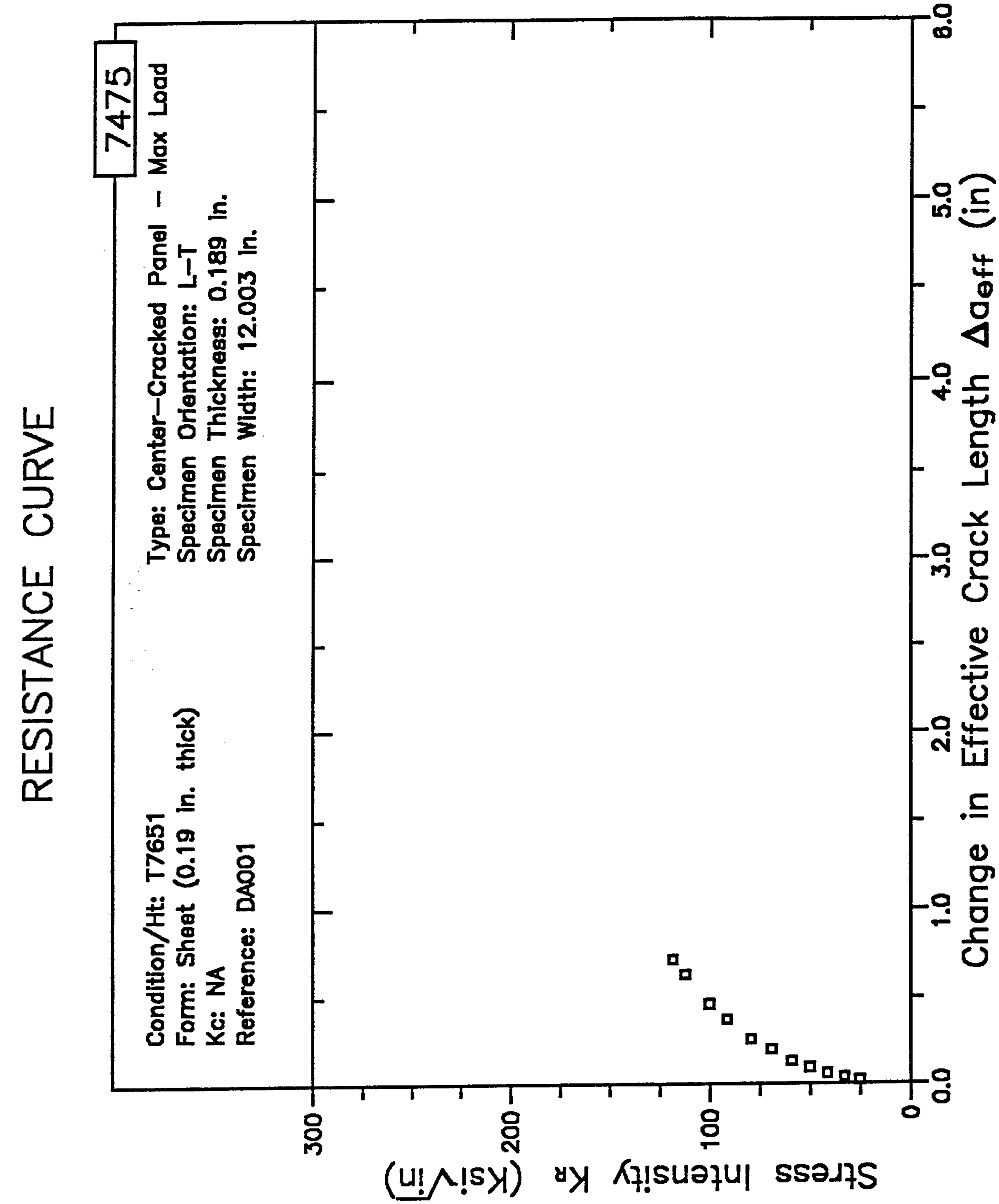

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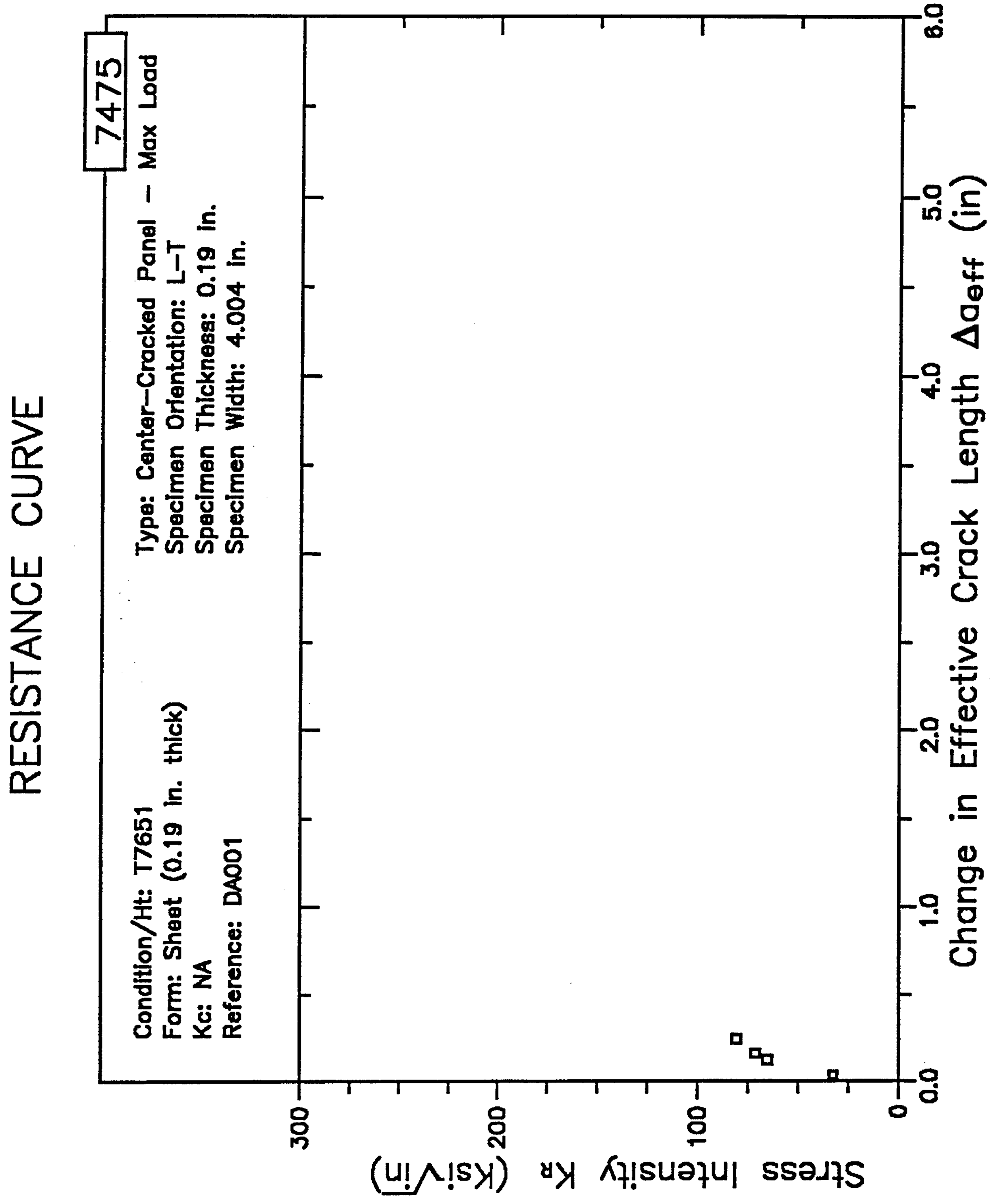

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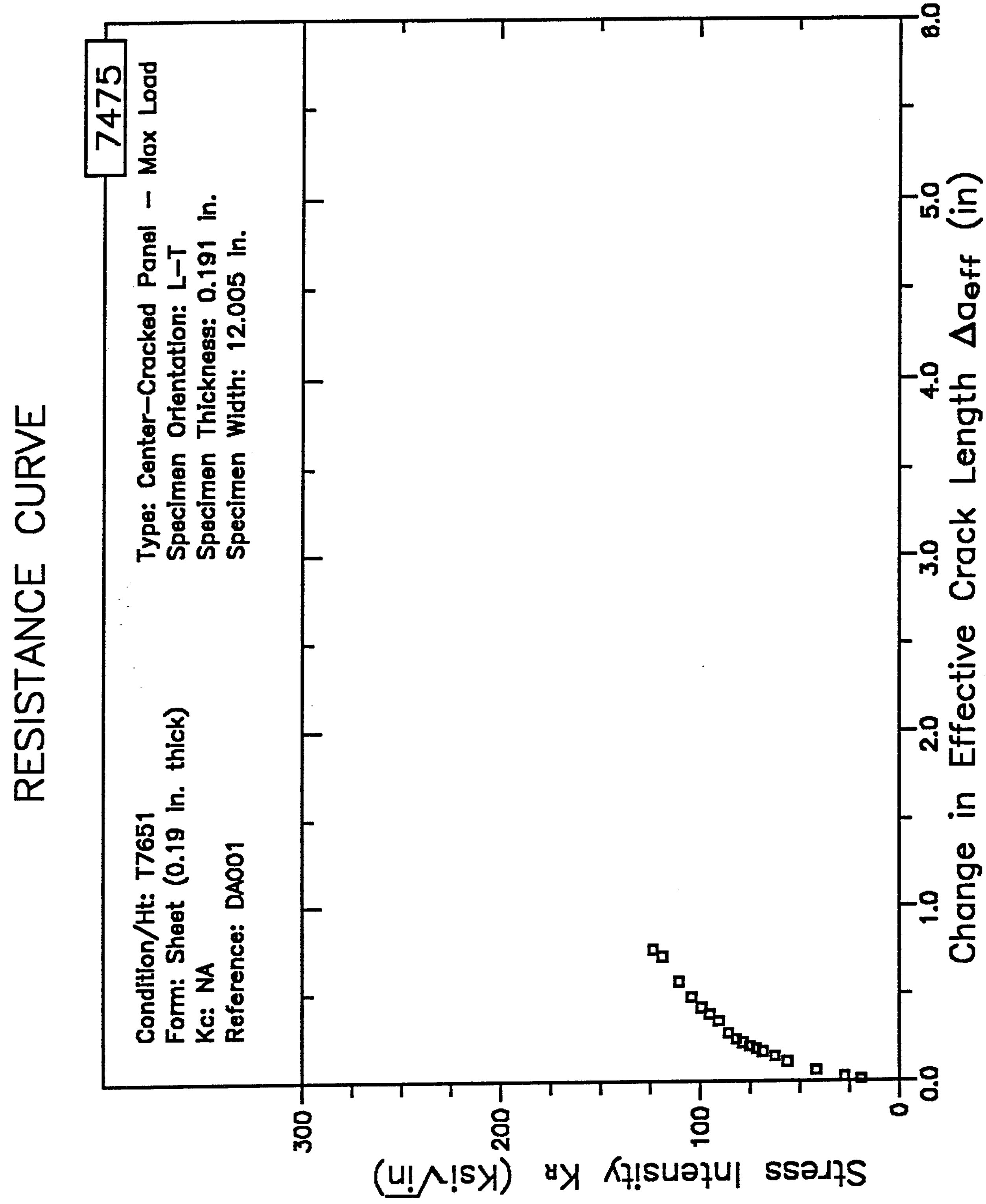

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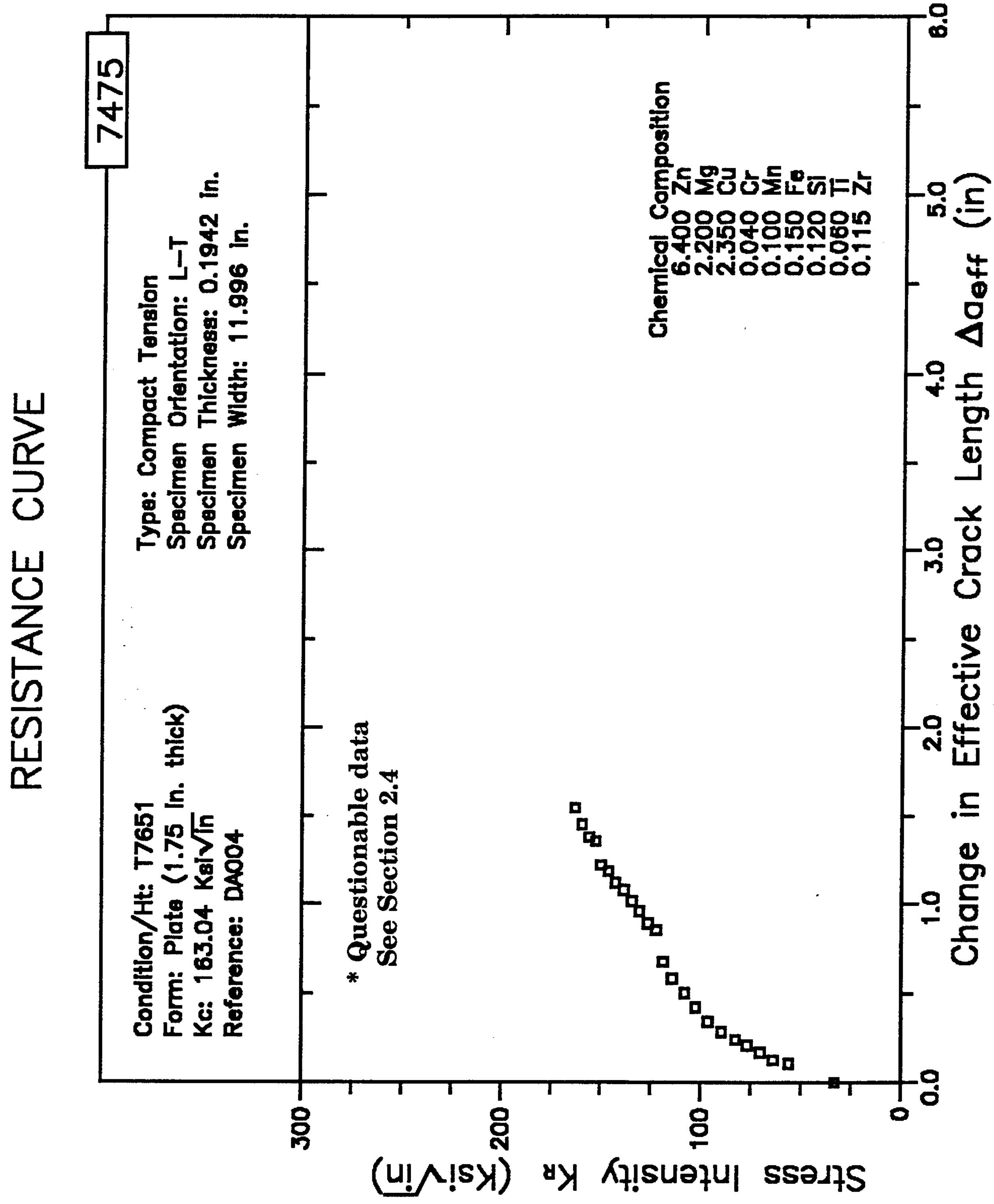

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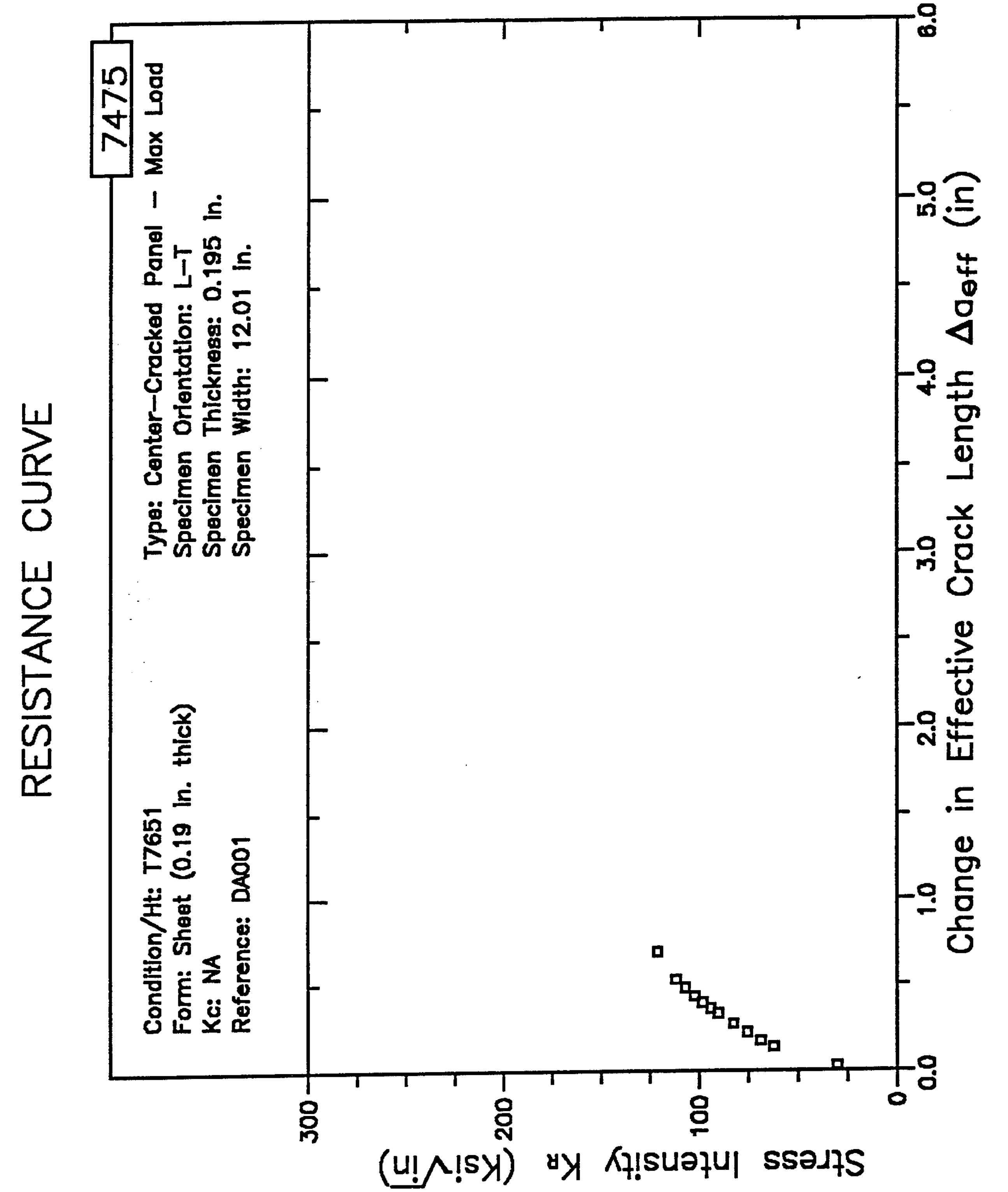

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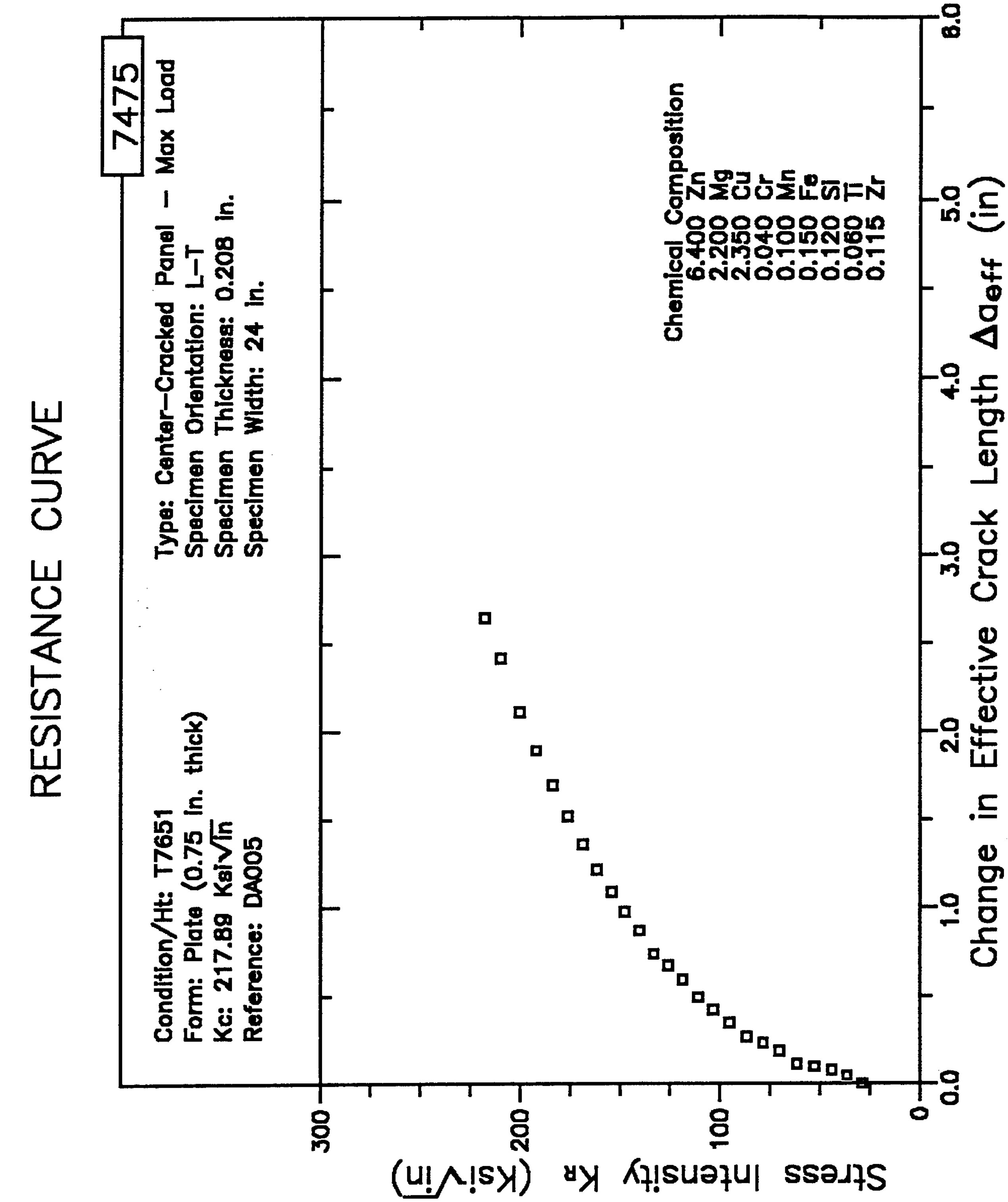

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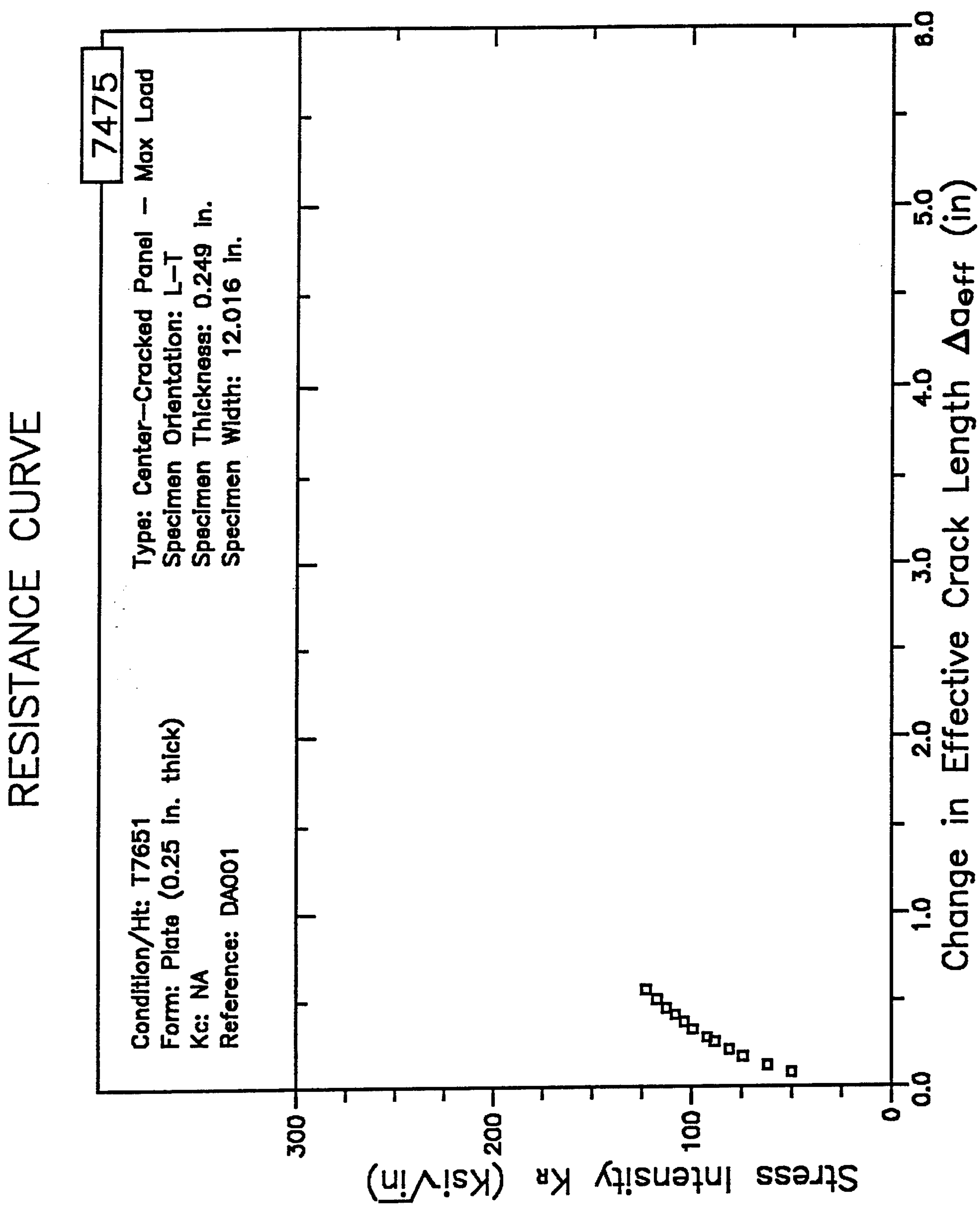

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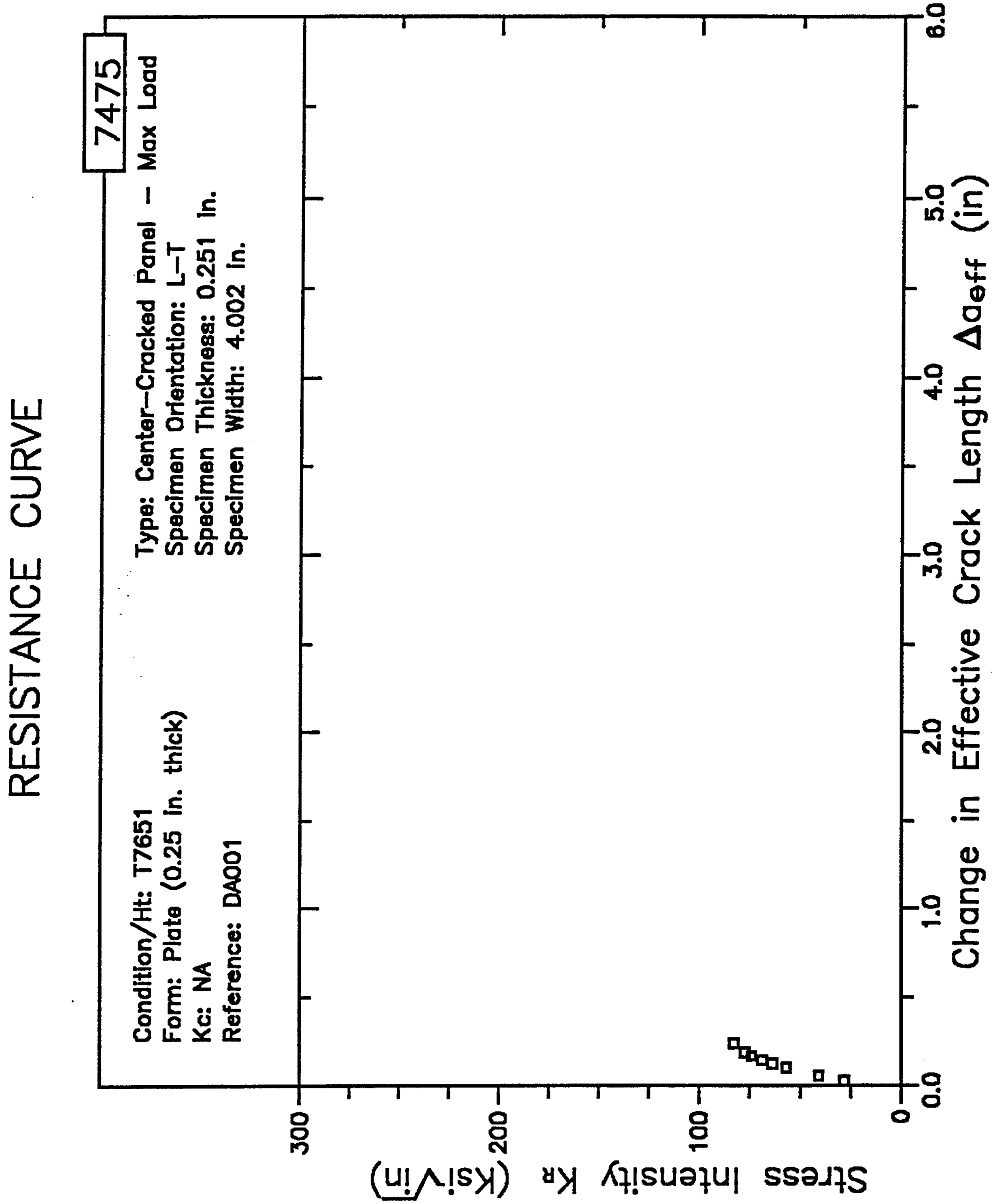

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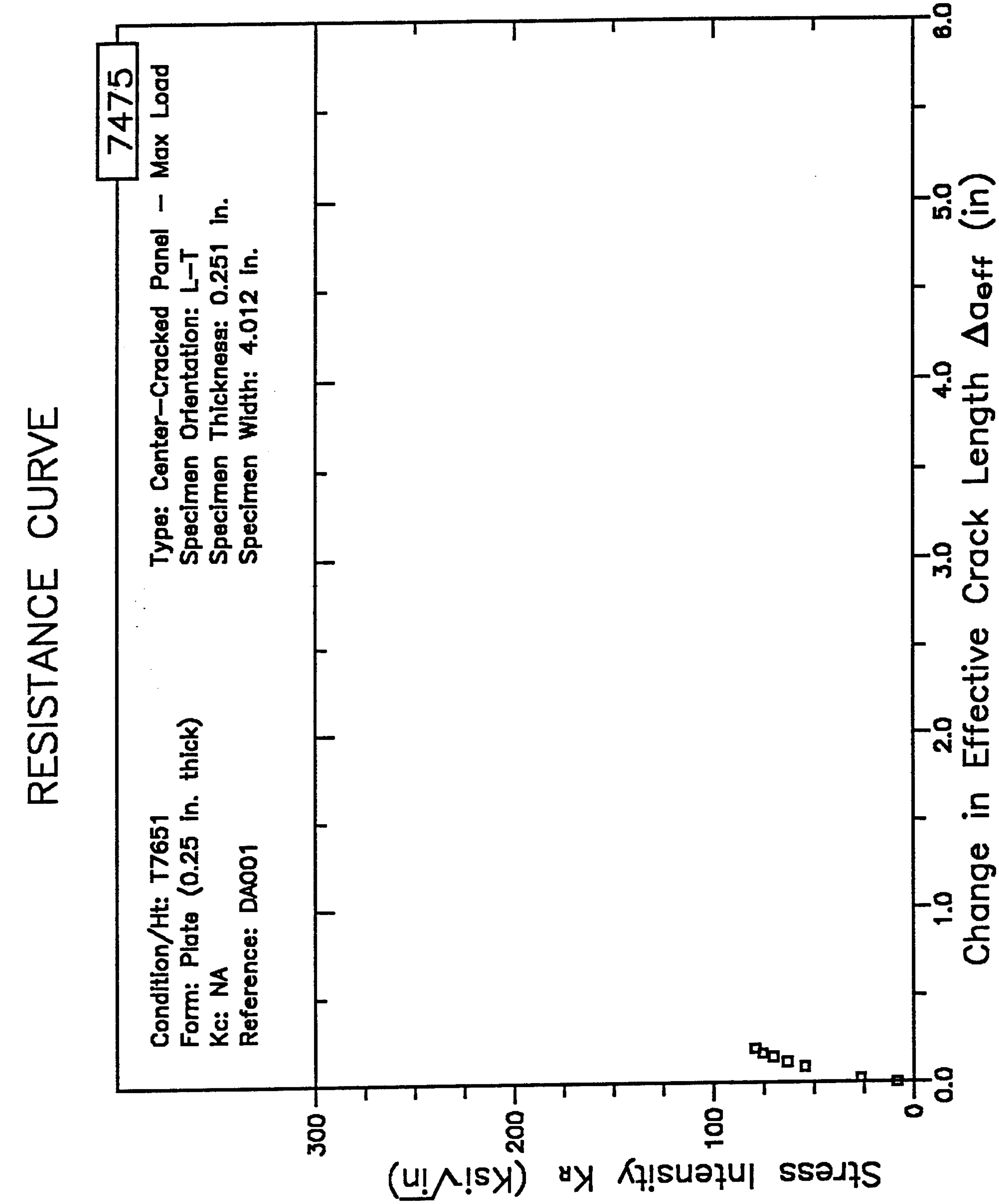

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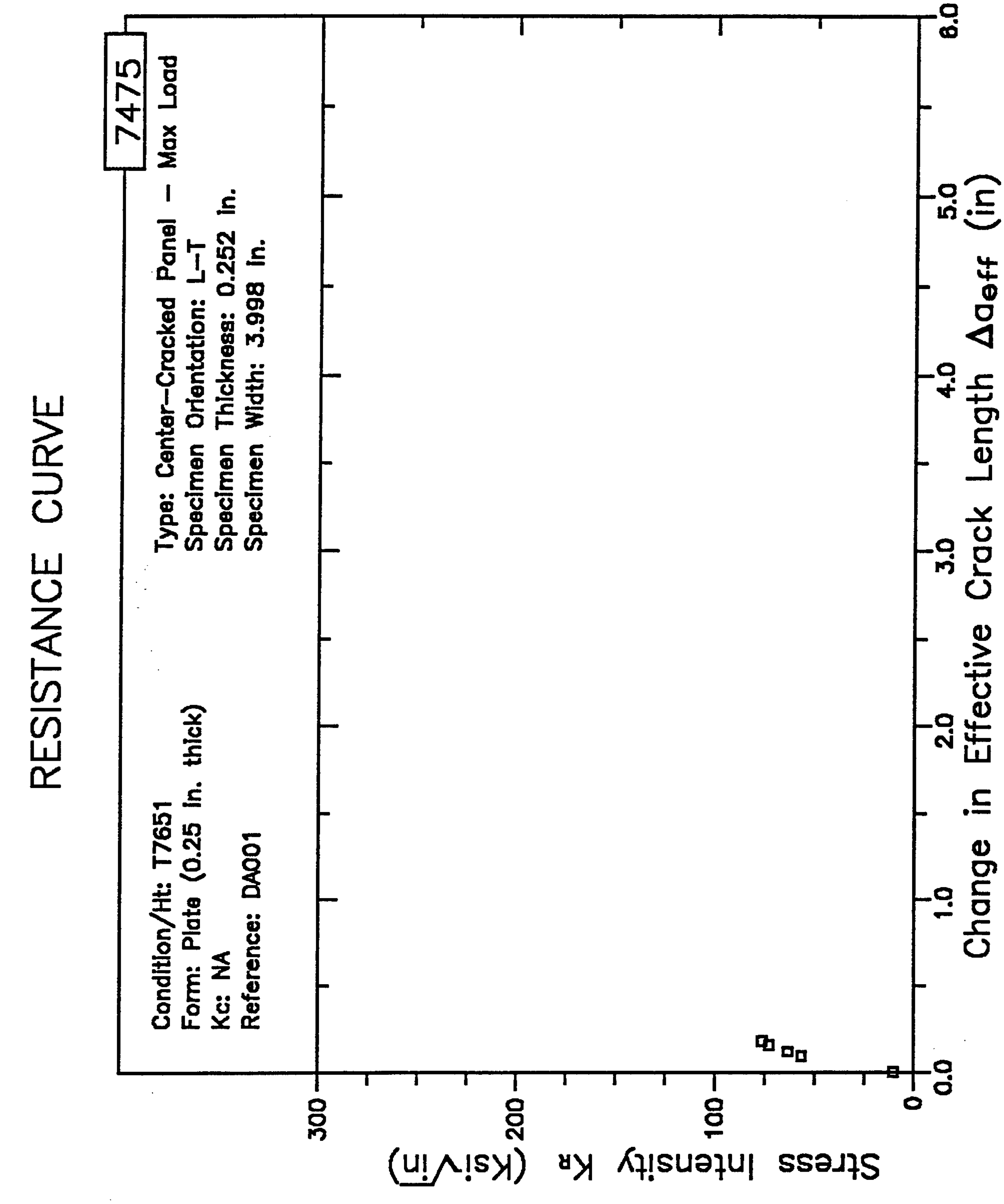

Figure 8.19.2.3.69

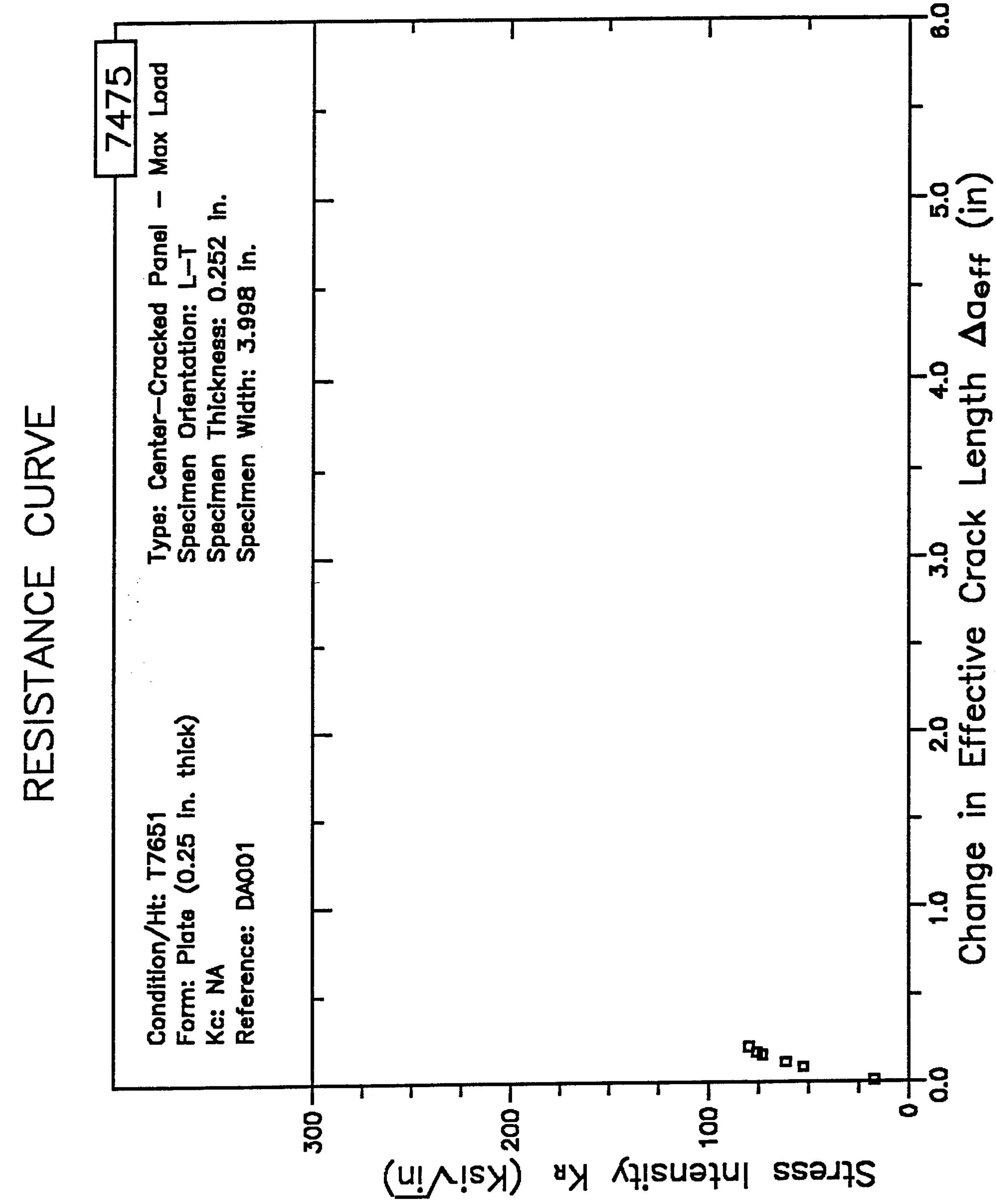

Figure 8.19.2.3.70

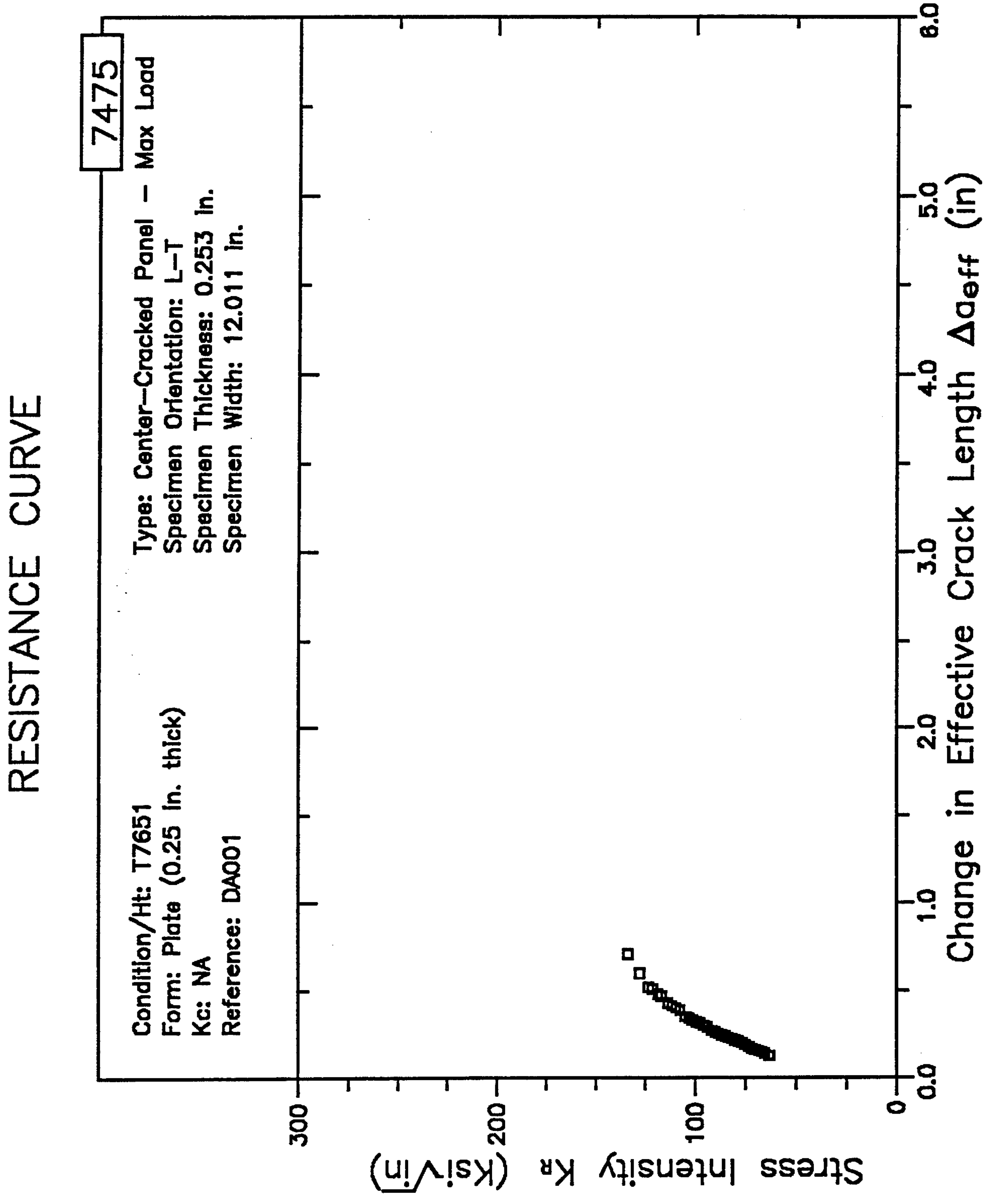

Figure 8.19.2.3.71

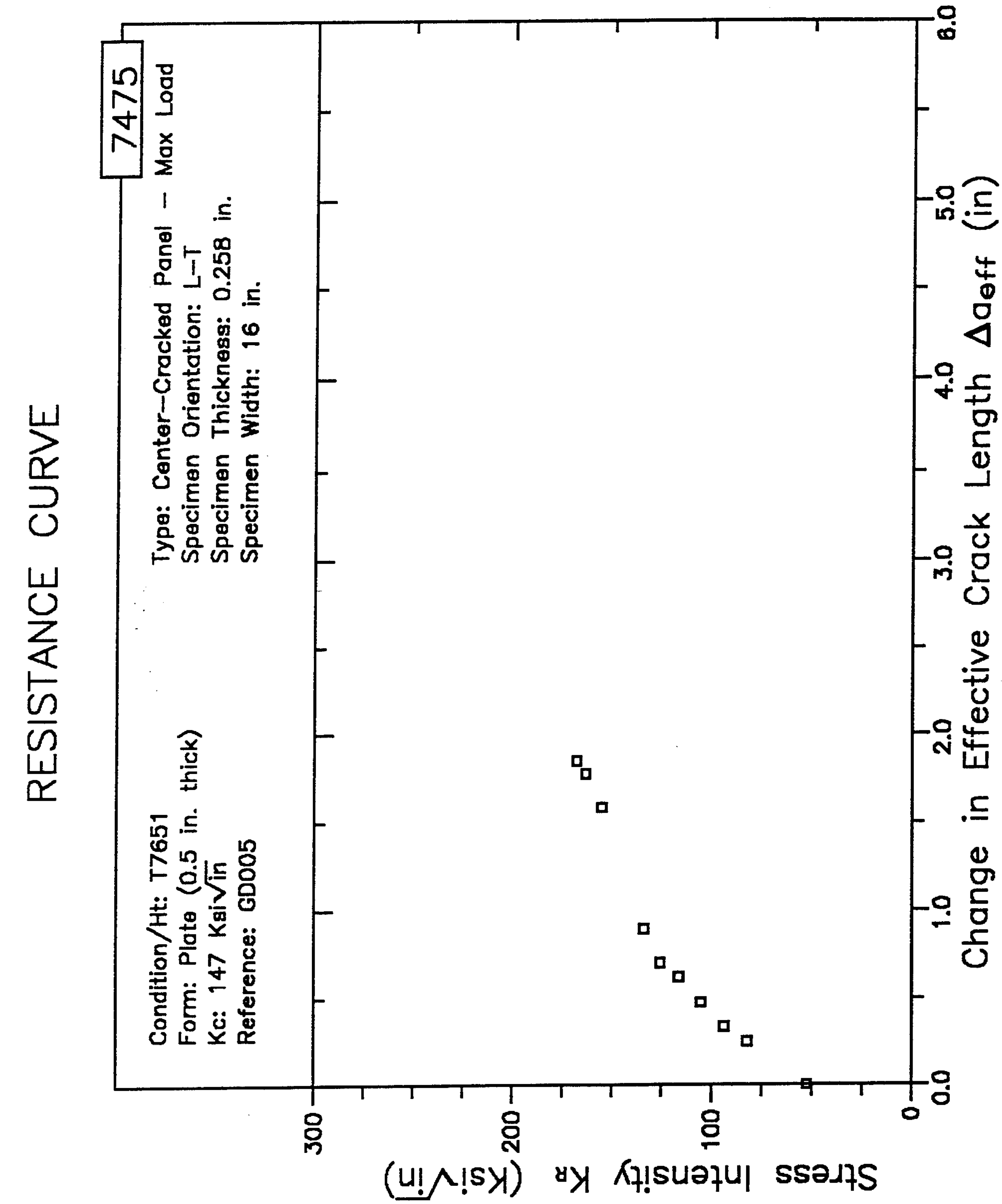

Figure 8.19.2.3.72

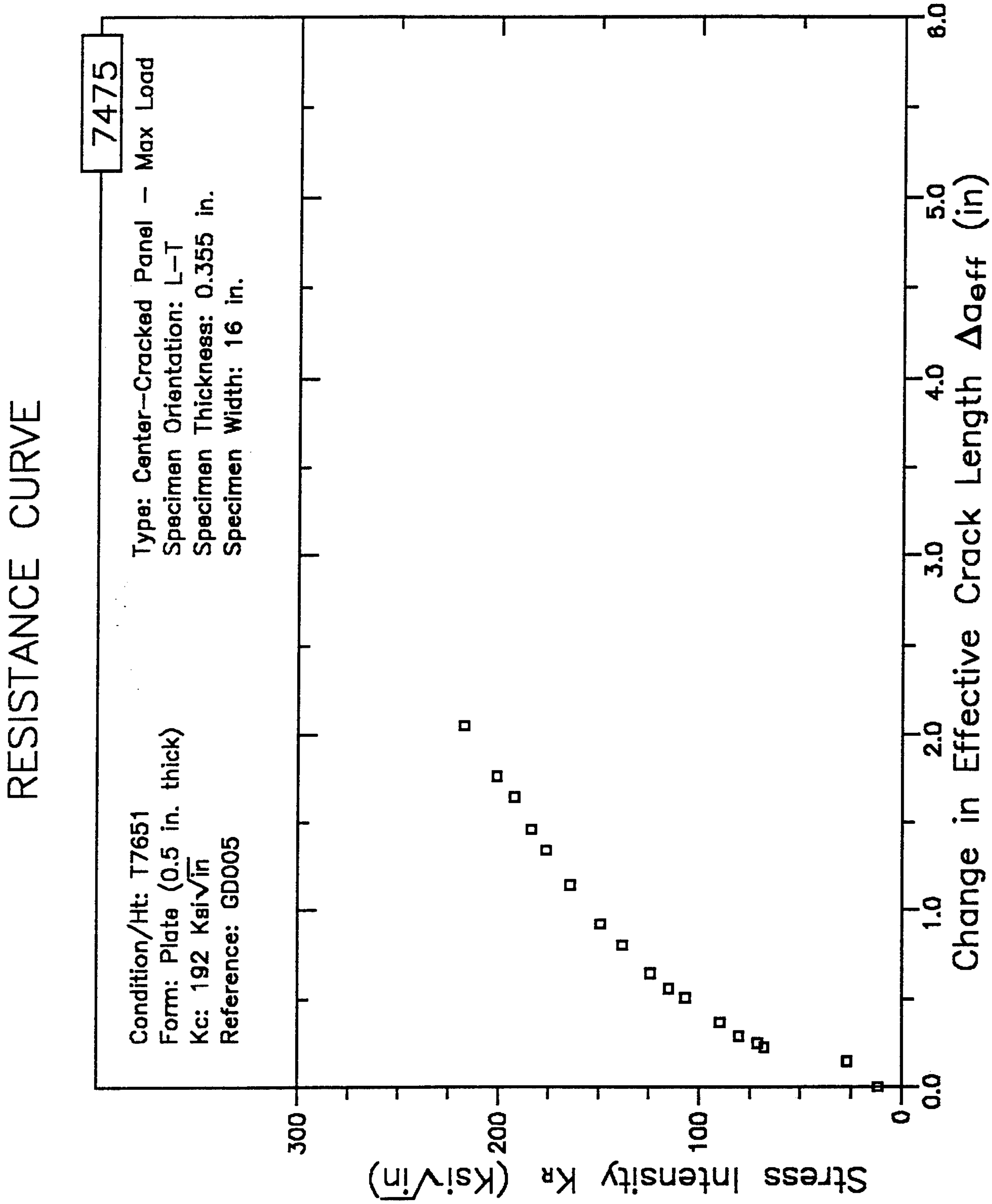

Figure 8.19.2.3.73

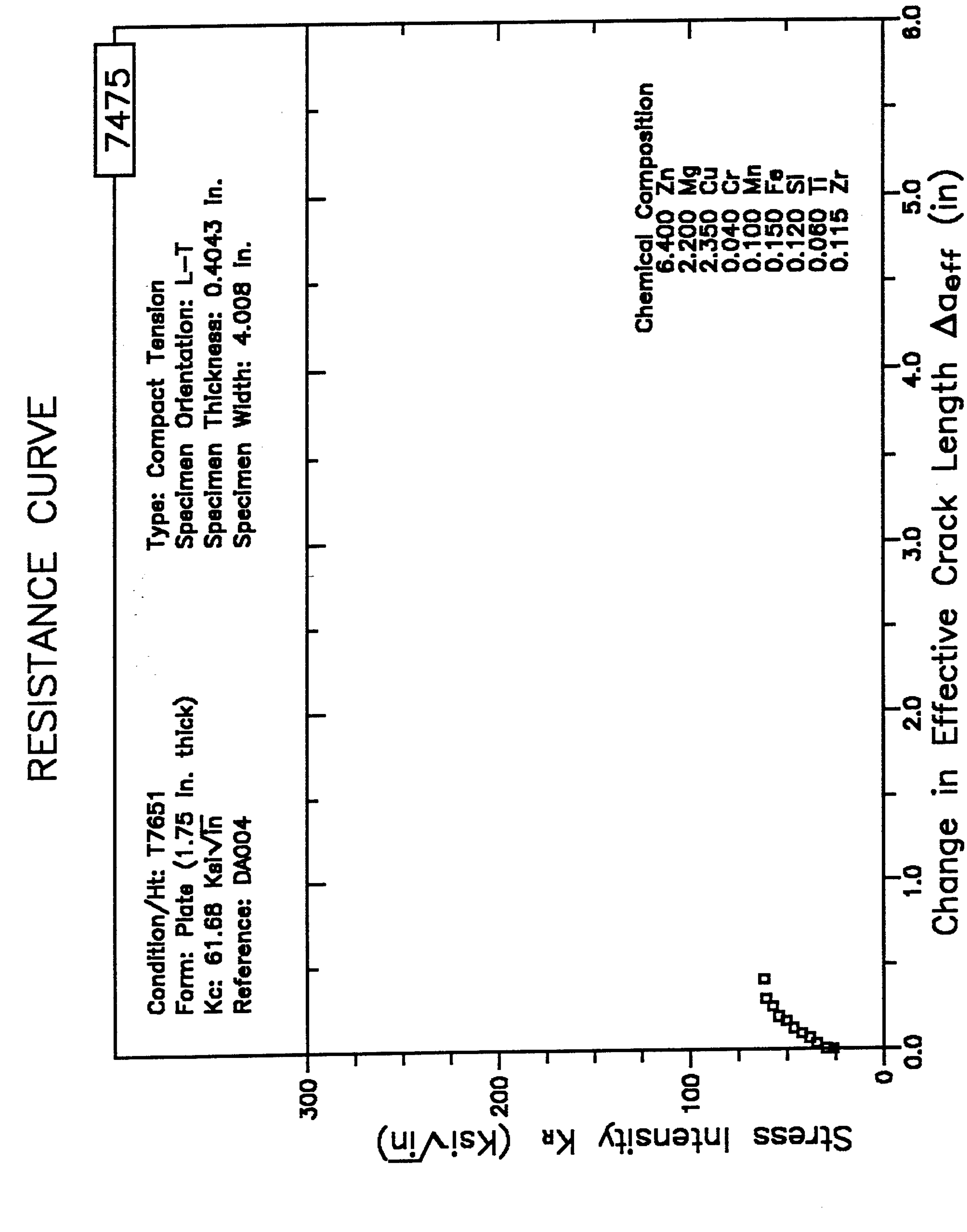

Figure 8.19.2.3.74

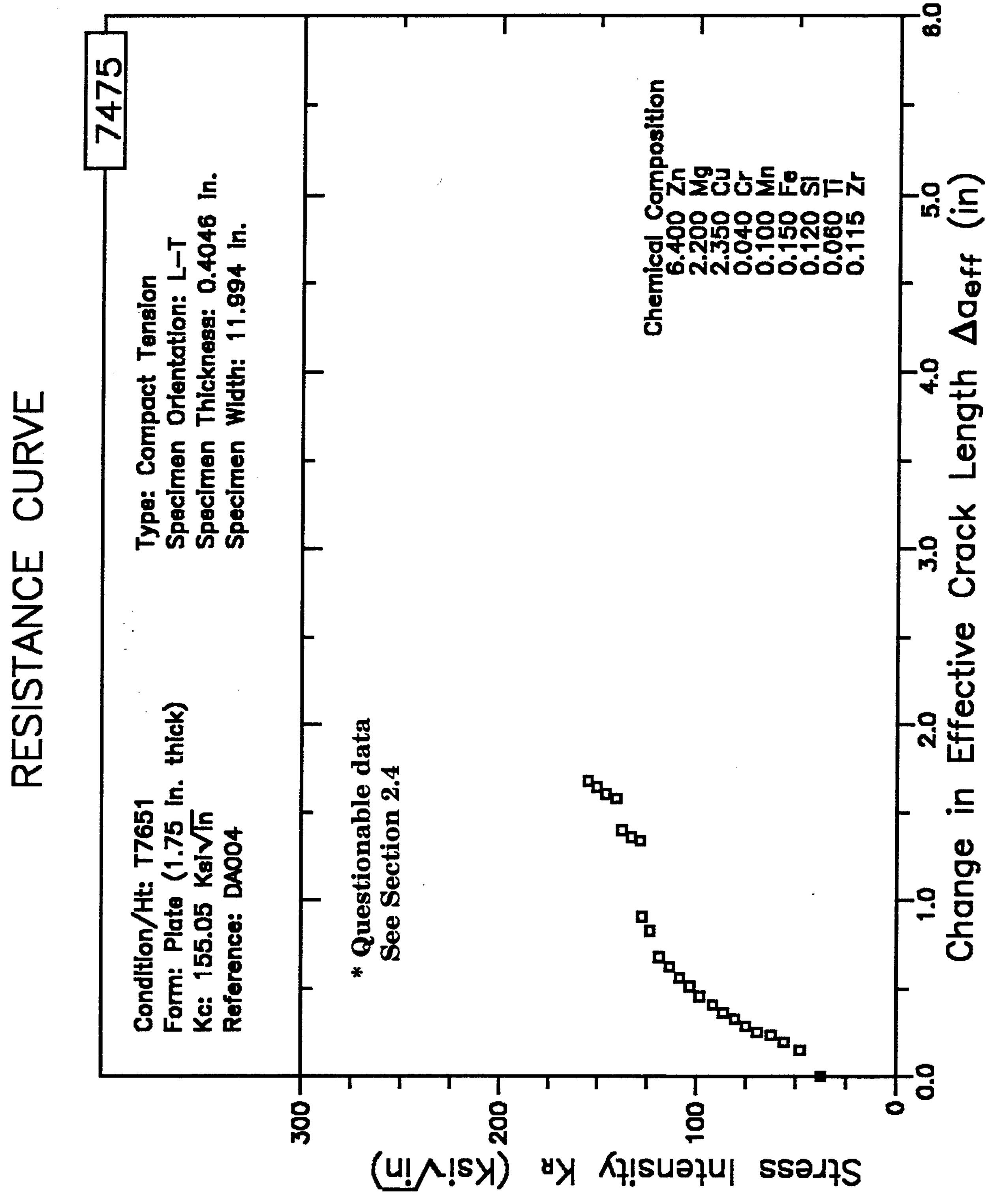

Figure 8.19.2.3.75

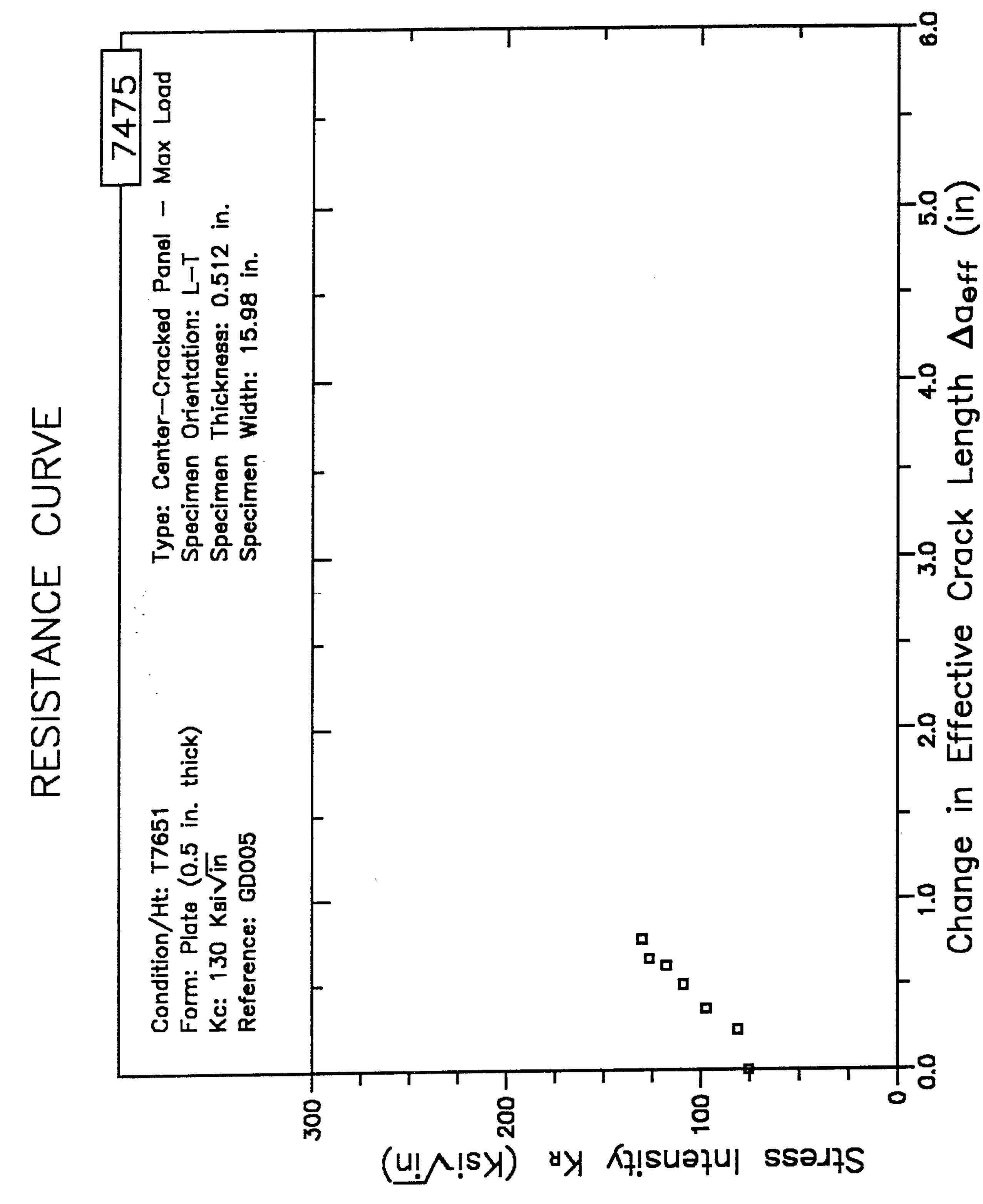

Figure 8.19.2.3.76

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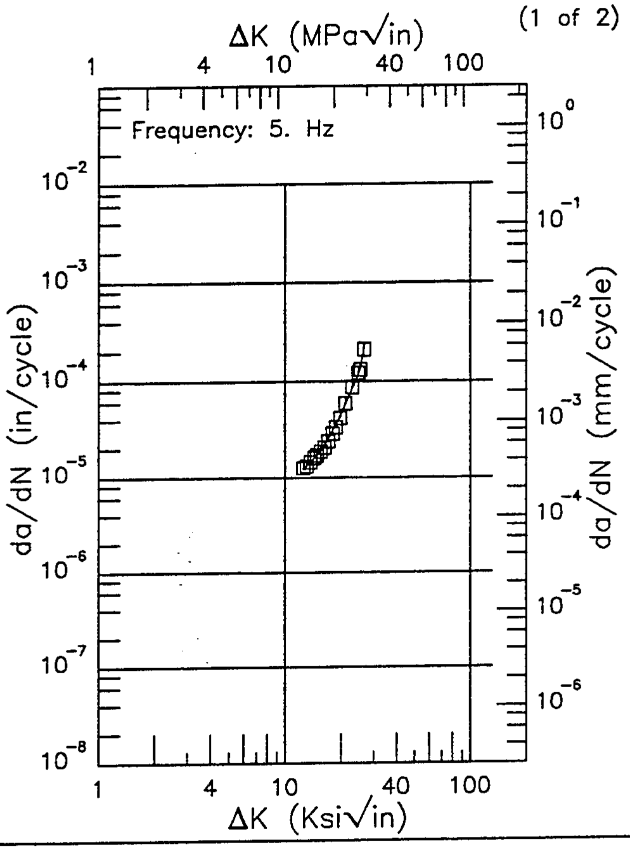
F | 7475

Condition/Ht: T6
Form: Sheet
Specimen Type: CCP (max load specified)
Orientation: L–T
Stress Ratio: 0.1
Environment: LAB AIR; RT

Yield Strength: 71 ksi
Ult. Strength:
Specimen Thk: 0.06 in.
Specimen Width: 3.999 – 4 in.
Ref: RI008

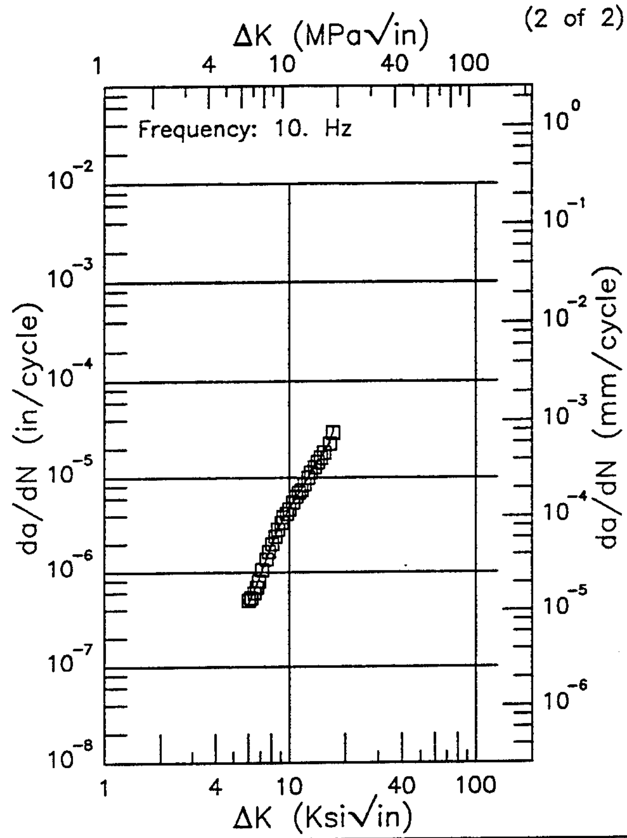
(1 of 2)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
12.44 (min)	12.2
13.	13.2
16.	20.1
20.	45.6
25.	124.
26.43 (max)	209.

RMS % Error	Life Prediction Ratio Summary
3.56	0. .5 .8 1.25 2.

(2 of 2)



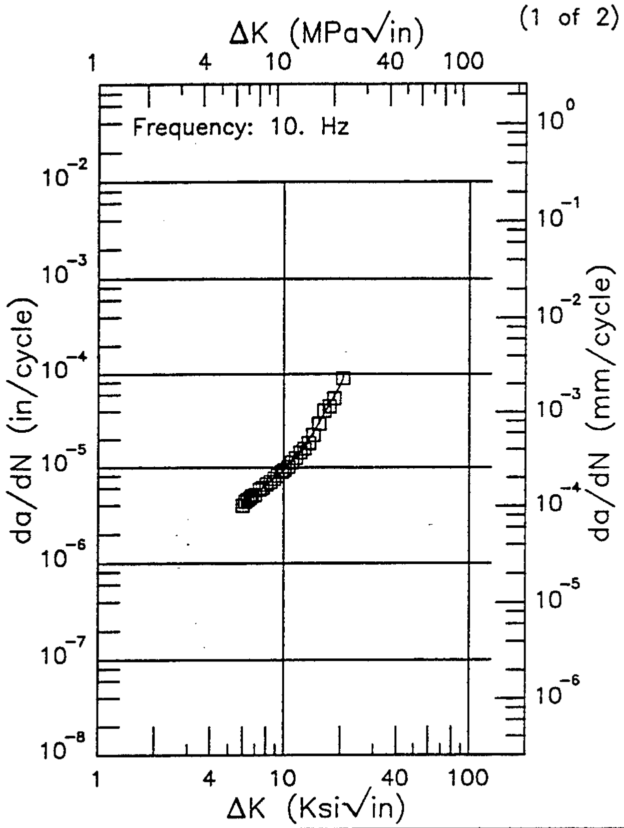
ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
6.05 (min)	0.469
7.	0.923
8.	1.89
9.	3.27
10.	4.74
13.	10.9
16.	20.1
17.10 (max)	28.7

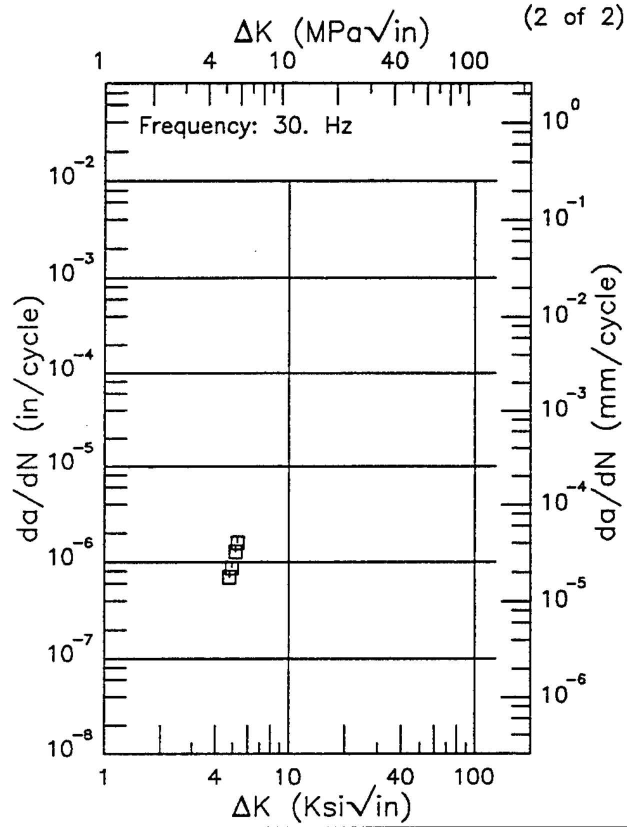
RMS % Error	Life Prediction Ratio Summary
2.85	0. .5 .8 1.25 2.

Figure 8.19.3.1.1

Condition/Ht: T6
Form: Sheet
Specimen Type: CCP (max load specified)
Orientation: L–T
Stress Ratio: 0.3
Environment: LAB AIR; RT

Yield Strength: 71 ksi
Ult. Strength:
Specimen Thk: 0.06 in.
Specimen Width: 3.999 – 4.002 in.
Ref: RI008





ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)
5.99 (min)	4.10
6.	4.11
7.	5.21
8.	6.47
9.	7.86
10.	9.35
13.	16.5
16.	35.1
20.	77.1
20.54 (max)	89.6

ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)

RMS % Error 2.74

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

RMS % Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

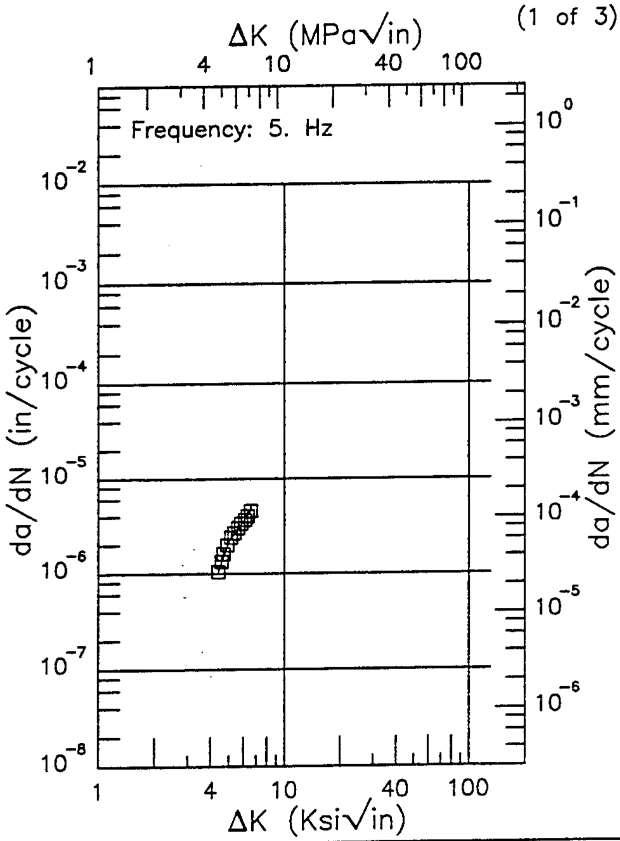
Figure 8.19.3.1.2

F 7475

Condition/Ht: T6
Form: Sheet
Specimen Type: CCP (max load specified)
Orientation: L–T
Stress Ratio: 0.5
Environment: LAB AIR; RT

Yield Strength: 71 ksi
Ult. Strength:
Specimen Thk: 0.06 – 0.061 in.
Specimen Width: 3.999 – 4 in.
Ref: RI008

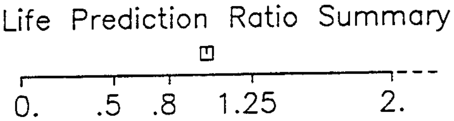
(1 of 3)



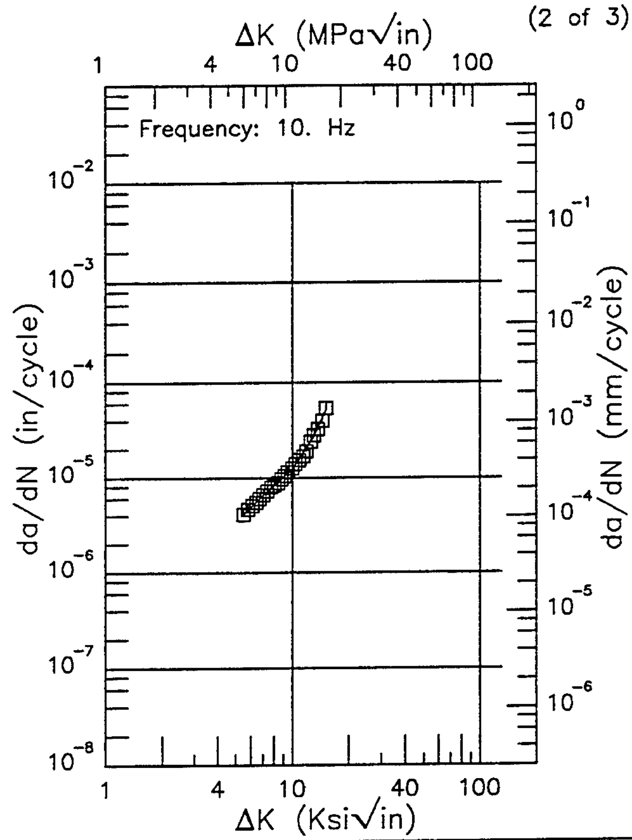
ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
4.41 (min)	1.05
5.	2.14
6.	3.50
6.57 (max)	4.56

RMS % Error 3.44

Life Prediction Ratio Summary



(2 of 3)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
5.50 (min)	4.07
6.	4.85
7.	6.53
8.	8.30
9.	10.2
10.	12.4
13.	26.6
15.18 (max)	52.2

RMS % Error 3.23

Life Prediction Ratio Summary

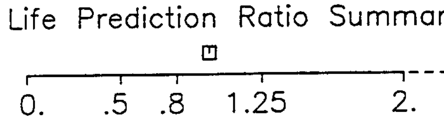
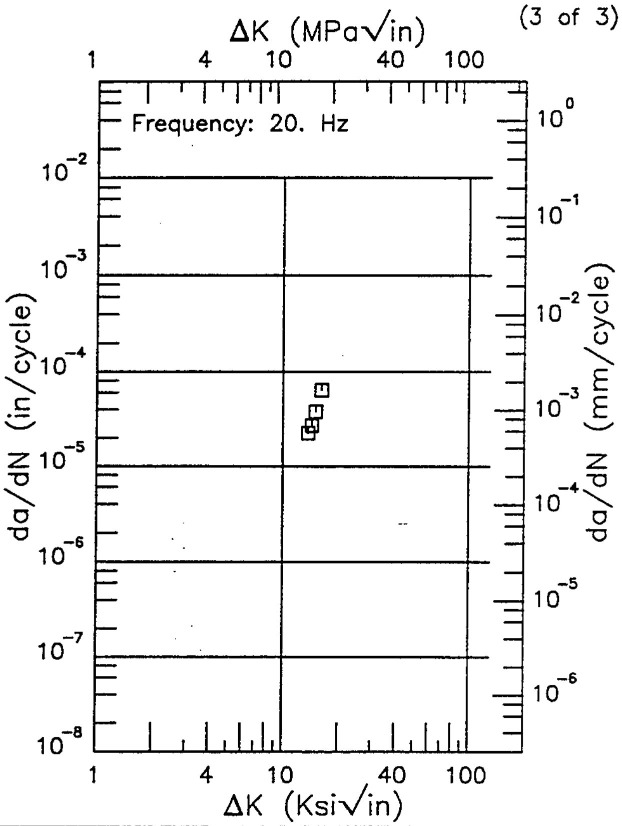


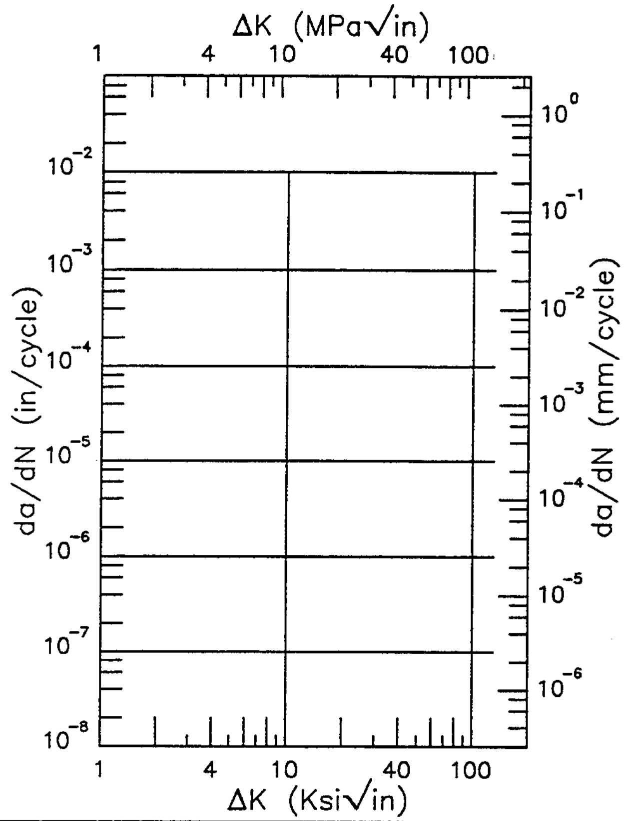
Figure 8.19.3.1.3

Condition/Ht: T6
Form: Sheet
Specimen Type: CCP (max load specified)
Orientation: L–T
Stress Ratio: 0.5
Environment: LAB AIR; RT

Yield Strength: 71 ksi
Ult. Strength:
Specimen Thk: 0.06 – 0.061 in.
Specimen Width: 3.999 – 4 in.
Ref: RI008

(3 of 3)





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)	ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error	Life Prediction Ratio Summary	RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.		0. .5 .8 1.25 2.

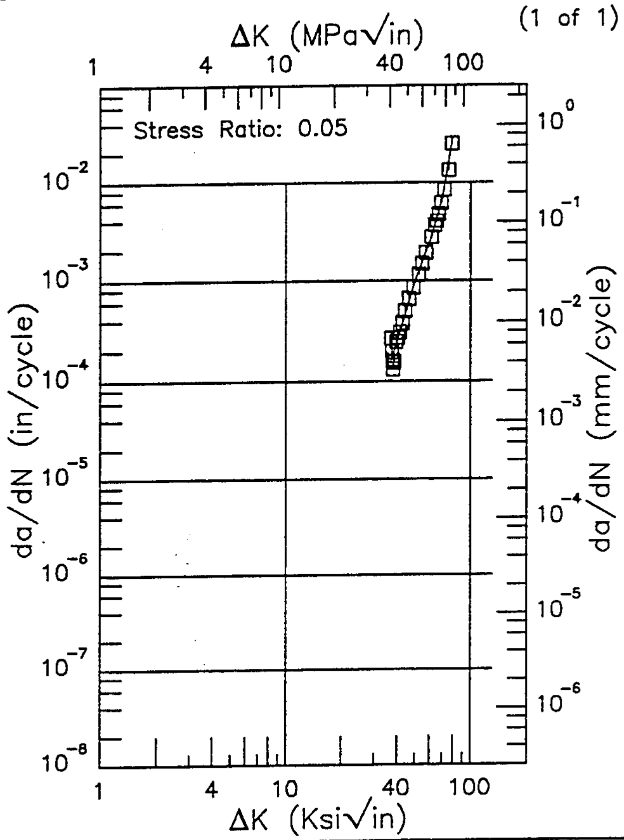
Figure 8.19.3.1.3 (Concluded)

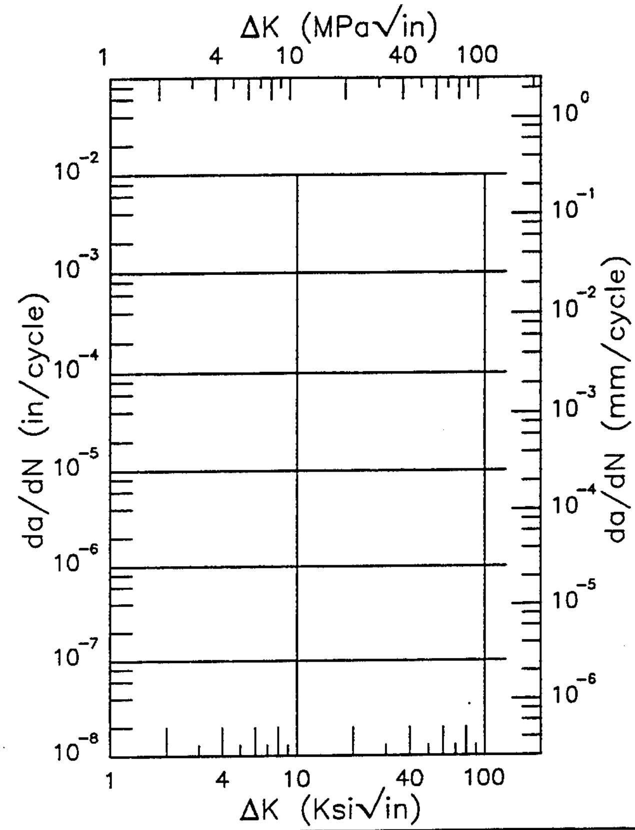
R 7475

Condition/Ht: T61
Form: 0.11 in. Sheet
Specimen Type: CCP (max load specified)
Orientation: L–T
Frequency: 2 Hz
Environment: H.H.A.; RT

Yield Strength: 75.3 ksi
Ult. Strength: 80.1 ksi
Specimen Thk: 0.111 in.
Specimen Width: 12 in.
Ref: 86212

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
37.09 (min)	157.
40.	242.
50.	962.
60.	2377.
70.	6621.
79.11 (max)	23897.

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error	Life Prediction Ratio Summary
17.50	0. .5 .8 1.25 2.

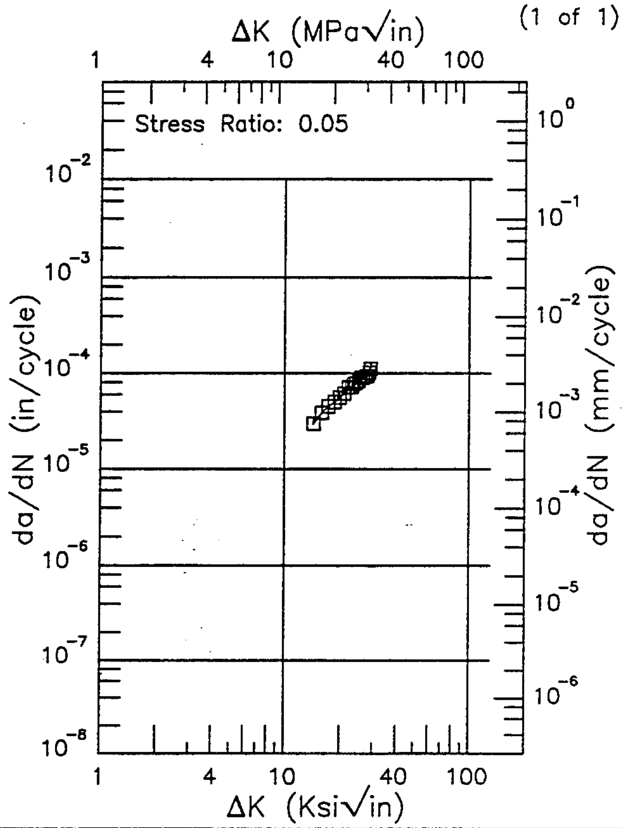
RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

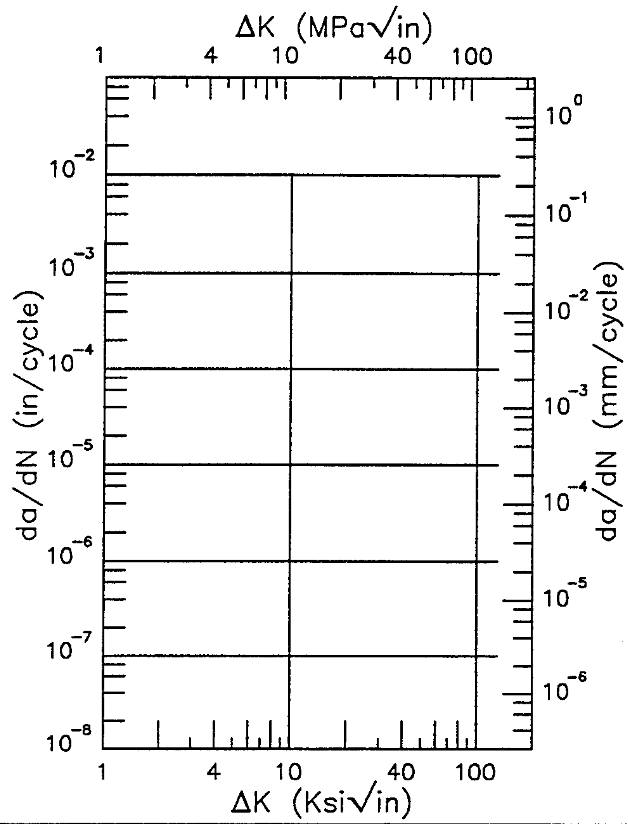
Figure 8.19.3.1.4

Condition/Ht: T61
Form: 0.11 in. Sheet
Specimen Type: CCP (max load specified)
Orientation: L–T
Frequency: 2 Hz
Environment: H.H.A.; RT

Yield Strength: 75.3 ksi
Ult. Strength: 80.1 ksi
Specimen Thk: 0.112 in.
Specimen Width: 23.98 in.
Ref: 86212

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)
14.23 (min)	29.6
16.	39.6
20.	57.0
25.	83.3
28.96 (max)	104.

ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)

RMS % Error	Life Prediction Ratio Summary
2.78	0. .5 .8 1.25 2.

RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

Figure 8.19.3.1.5

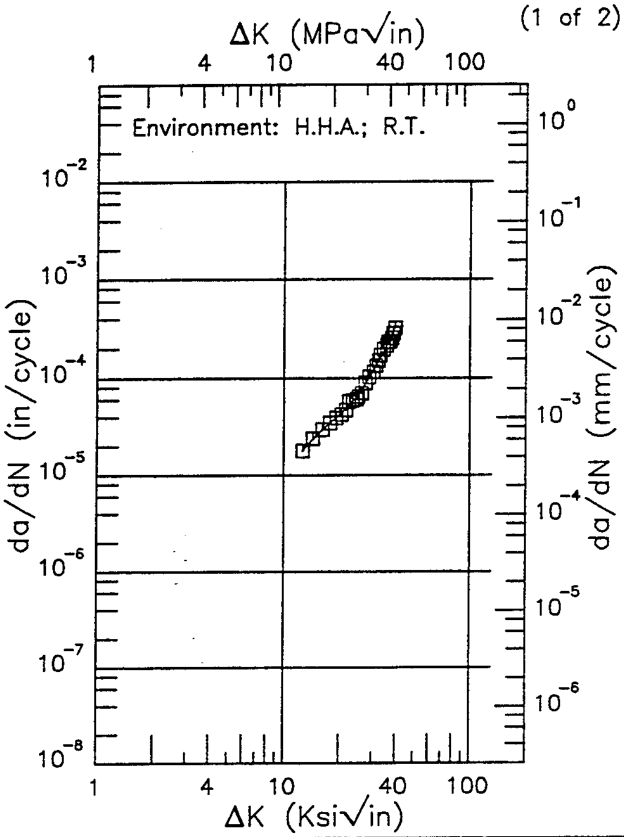
E

7475

Condition/Ht: T61
Form: 0.11 in. Sheet
Specimen Type: CCP (max load specified)
Orientation: L–T
Stress Ratio: 0.05
Frequency: 2 Hz

Yield Strength: 68.6 – 75.3 ksi
Ult. Strength: 74.5 – 80.1 ksi
Specimen Thk: 0.112 – 0.113 in.
Specimen Width: 36 in.
Ref: 86212

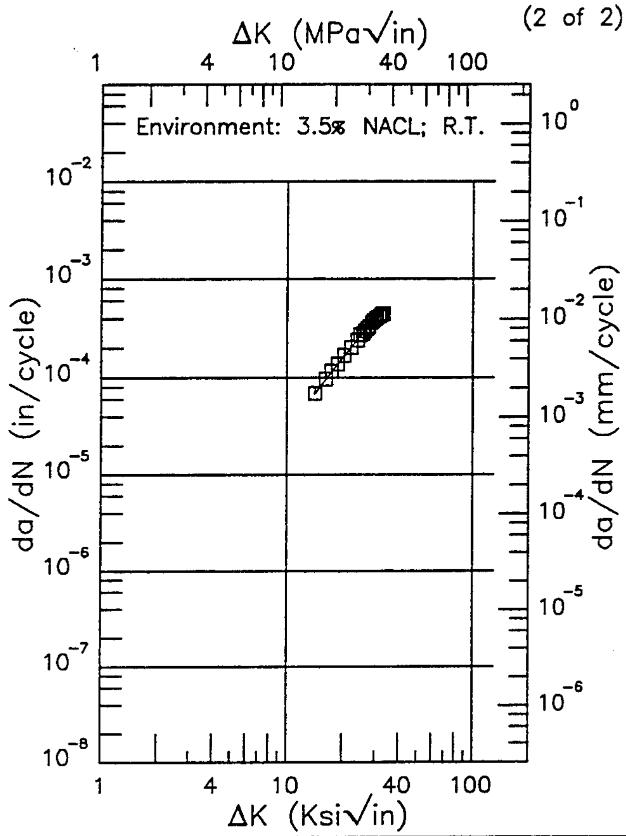
(1 of 2)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
12.56 (min)	17.8
13.	19.4
16.	29.5
20.	42.3
25.	66.4
30.	116.
35.	199.
39.58 (max)	305.

RMS % Error	Life Prediction Ratio Summary
3.35	0. .5 .8 1.25 2.

(2 of 2)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
14.22 (min)	68.2
16.	91.8
20.	159.
25.	264.
30.	391.
33.00 (max)	441.

RMS % Error	Life Prediction Ratio Summary
1.19	0. .5 .8 1.25 2.

Figure 8.19.3.1.6

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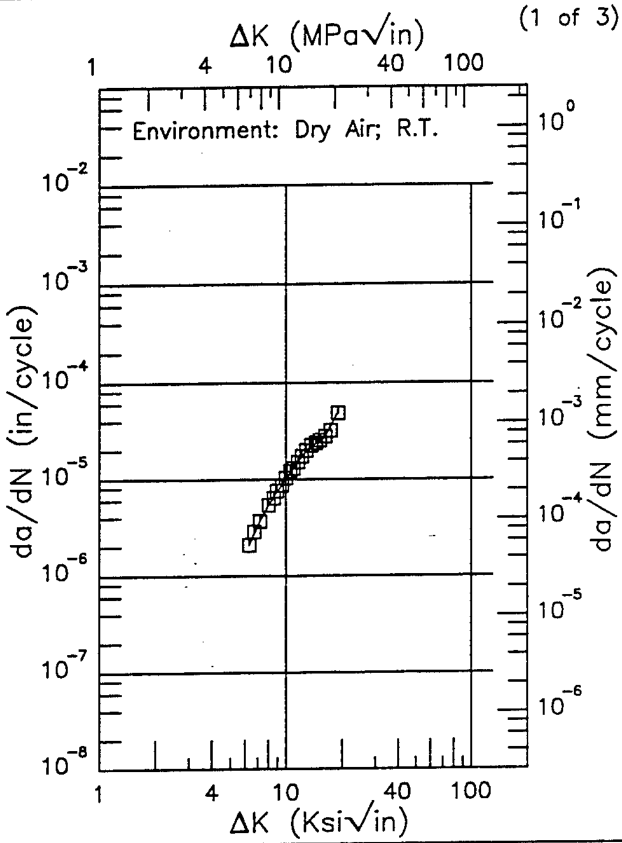
7475

E

Condition/Ht: T61
Form: 0.13 in. Sheet
Specimen Type: CCP (max load specified)
Orientation: L-T
Stress Ratio: 0.33
Frequency: 13.3 Hz

Yield Strength: 76.8 ksi
Ult. Strength: 82 ksi
Specimen Thk: 0.126 in.
Specimen Width: 4 in.
Ref: 86842

(1 of 3)

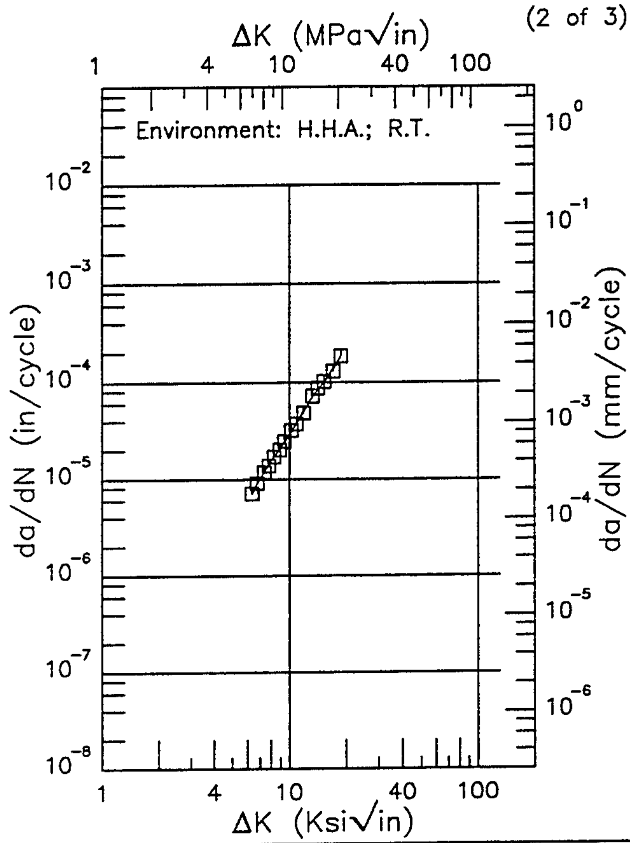


ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
6.32 (min)	2.13
7.	3.30
8.	5.31
9.	7.61
10.	10.2
13.	20.2
16.	27.2
18.93 (max)	48.4

RMS % Error
3.21

Life Prediction Ratio Summary
0. .5 .8 1.25 2.

(2 of 3)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
6.33 (min)	7.10
7.	10.2
8.	15.3
9.	21.3
10.	28.7
13.	67.3
16.	112.
18.76 (max)	183.

RMS % Error
2.66

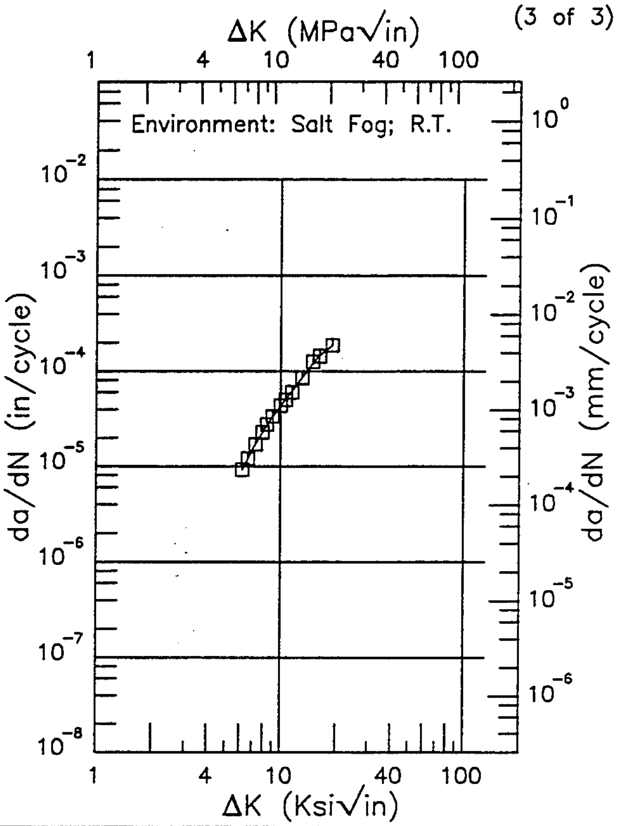
Life Prediction Ratio Summary
0. .5 .8 1.25 2.

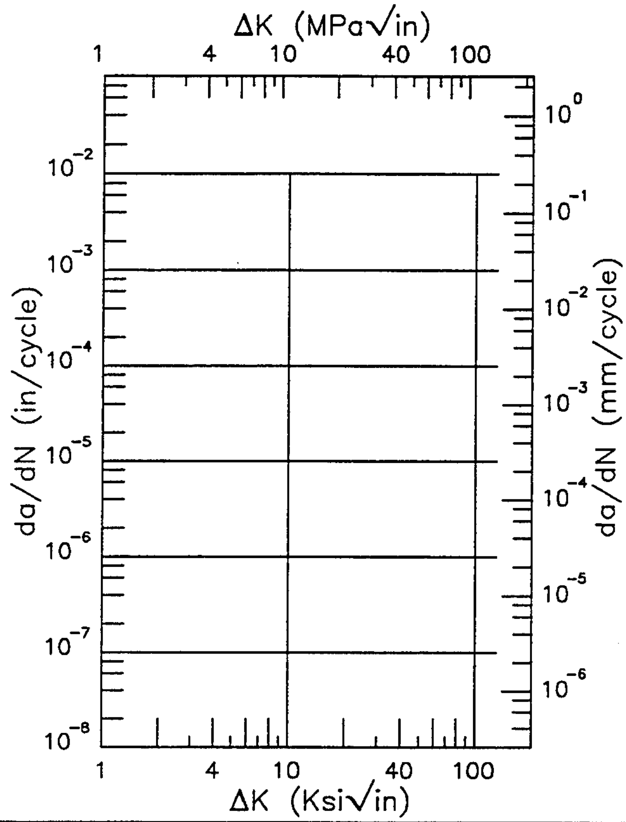
Figure 8.19.3.1.7

Condition/Ht: T61
Form: 0.13 in. Sheet
Specimen Type: CCP (max load specified)
Orientation: L–T
Stress Ratio: 0.33
Frequency: 13.3 Hz

Yield Strength: 76.8 ksi
Ult. Strength: 82 ksi
Specimen Thk: 0.126 in.
Specimen Width: 4 in.
Ref: 86842

(3 of 3)





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
6.18 (min)	9.09
7.	15.1
8.	23.7
9.	33.3
10.	43.8
13.	85.2
16.	144.
18.95 (max)	185.

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error	Life Prediction Ratio Summary
1.71	0. .5 .8 1.25 2.

RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

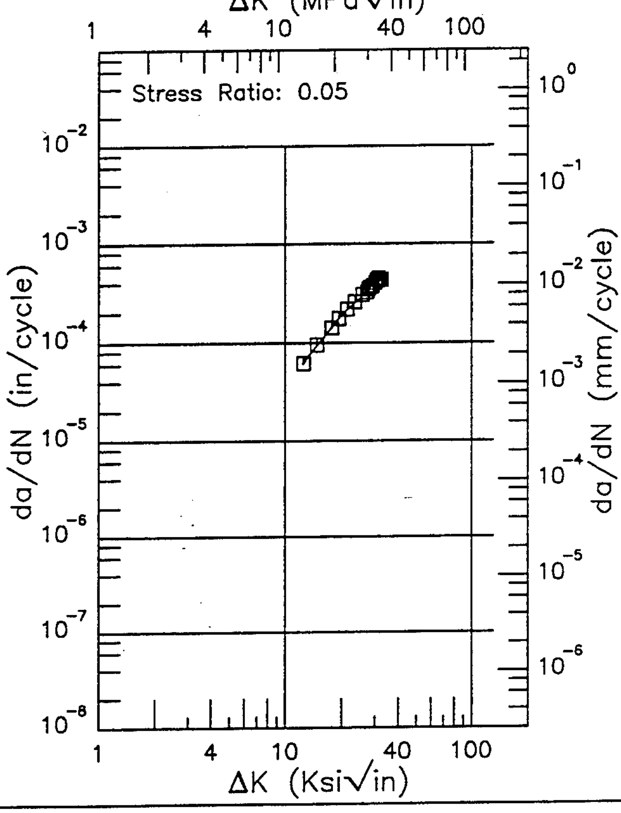
Figure 8.19.3.1.7 (Concluded)

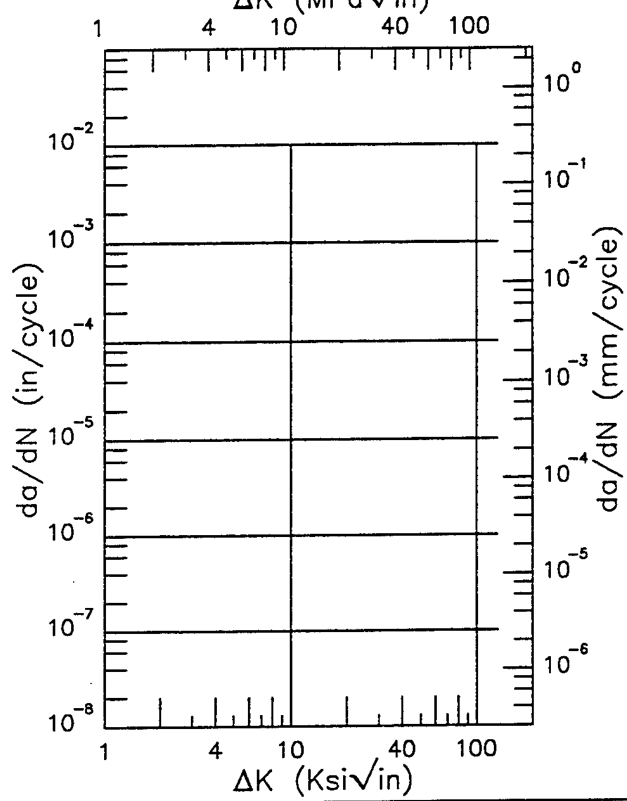
7475

Condition/Ht: T61
Form: 0.11 in. Sheet
Specimen Type: CCP (max load specified)
Orientation: T–L
Frequency: 2 Hz
Environment: 3.5% NACL; RT

Yield Strength: 73.1 ksi
Ult. Strength: 80.6 ksi
Specimen Thk: 0.112 in.
Specimen Width: 35.98 in.
Ref: 86212

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)
12.45 (min)	61.3
13.	68.7
16.	114.
20.	191.
25.	286.
30.	404.
32.47 (max)	435.

ΔK (Ksi√in) da/dN (10^{-6} in/cycle)

RMS % Error	Life Prediction Ratio Summary
1.90	0. .5 .8 1.25 2.

RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

Figure 8.19.3.1.8

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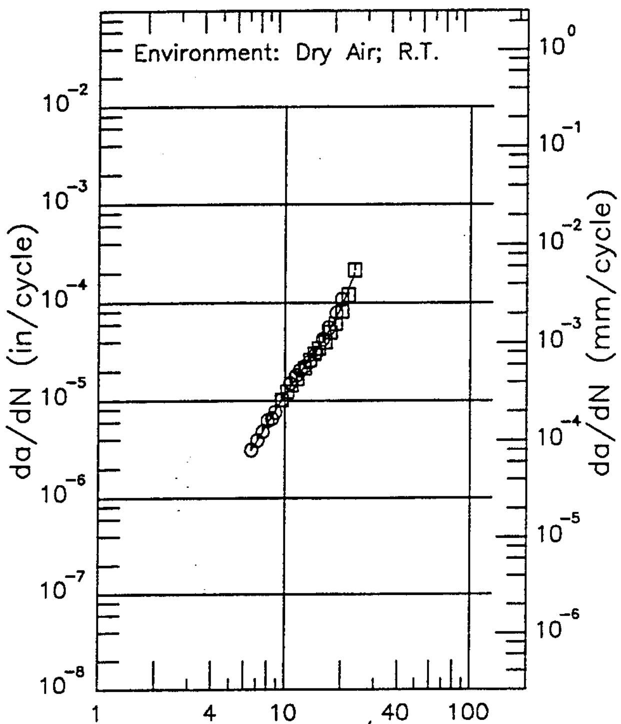
7475

E

Condition/Ht: T61
Form: 0.13 in. Sheet
Specimen Type: CCP (max load specified)
Orientation: T–L
Stress Ratio: 0.33
Frequency: 13.3 Hz

Yield Strength: 73.1 ksi
Ult. Strength: 76.8 ksi
Specimen Thk: 0.126 in.
Specimen Width: 4 in.
Ref: 86842

(1 of 3)

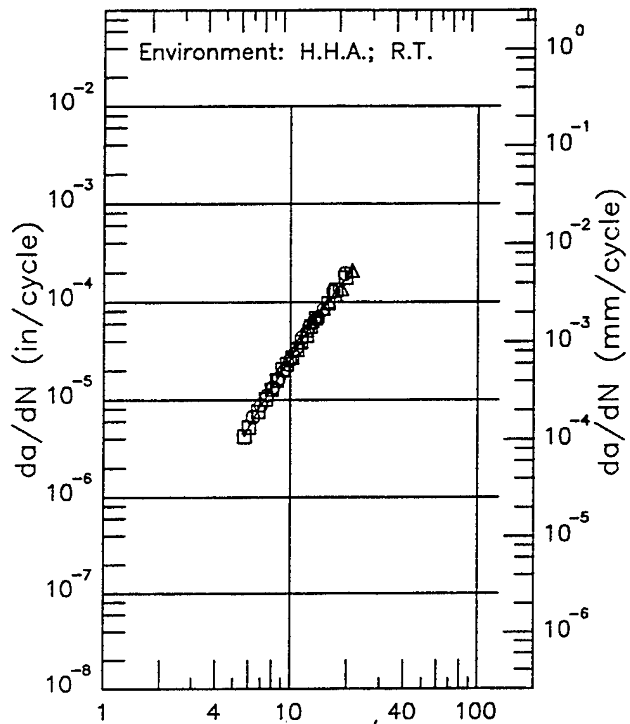


ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
6.57 (min)	3.08
7.	3.76
8.	5.74
9.	8.31
10.	11.5
13.	23.8
16.	41.1
20.	89.7
23.38 (max)	201.

RMS % Error: 7.28

Life Prediction Ratio Summary: 0. .5 .8 1.25 2.

(2 of 3)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
5.72 (min)	4.34
6.	5.17
7.	8.72
8.	13.2
9.	19.0
10.	26.3
13.	58.8
16.	101.
20.	181.
21.13 (max)	208.

RMS % Error: 4.82

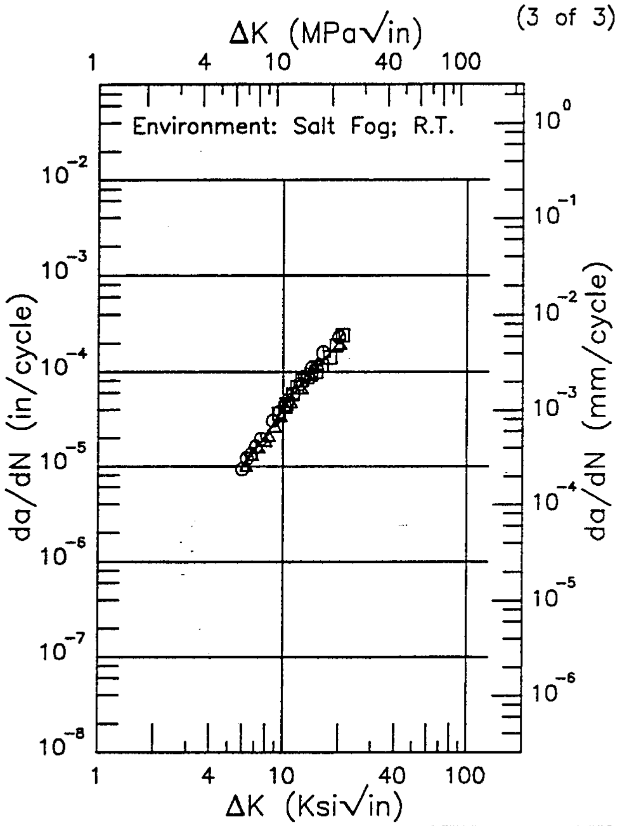
Life Prediction Ratio Summary: 0. .5 .8 1.25 2.

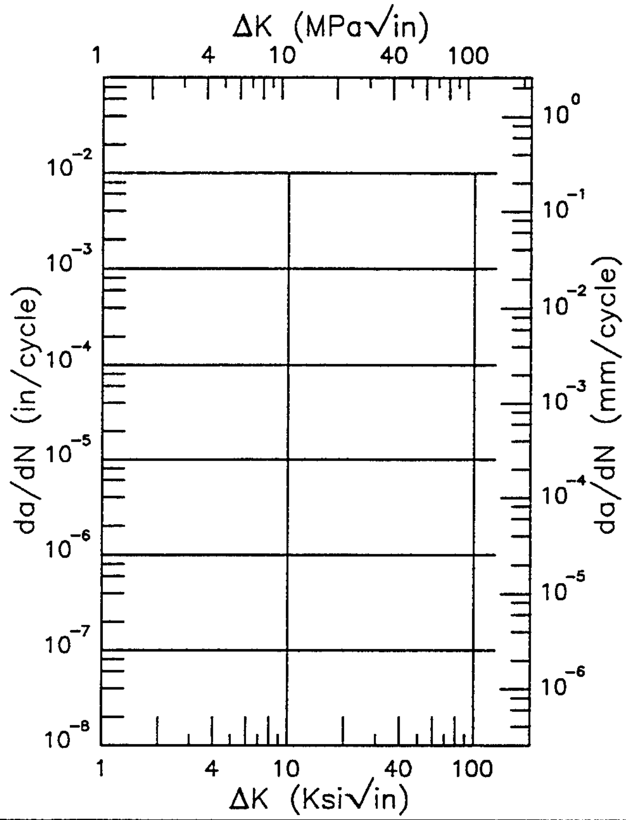
Figure 8.19.3.1.9

Condition/Ht: T61
Form: 0.13 in. Sheet
Specimen Type: CCP (max load specified)
Orientation: T–L
Stress Ratio: 0.33
Frequency: 13.3 Hz

Yield Strength: 73.1 ksi
Ult. Strength: 76.8 ksi
Specimen Thk: 0.126 in.
Specimen Width: 4 in.
Ref: 86842

(3 of 3)





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
5.95 (min)	9.67
6.	9.88
7.	14.7
8.	21.1
9.	29.3
10.	40.2
13.	85.9
16.	127.
20.	209.
20.82 (max)	251.

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error: 7.49

Life Prediction Ratio Summary: 0. .5 .8 1.25 2.

RMS % Error

Life Prediction Ratio Summary: 0. .5 .8 1.25 2.

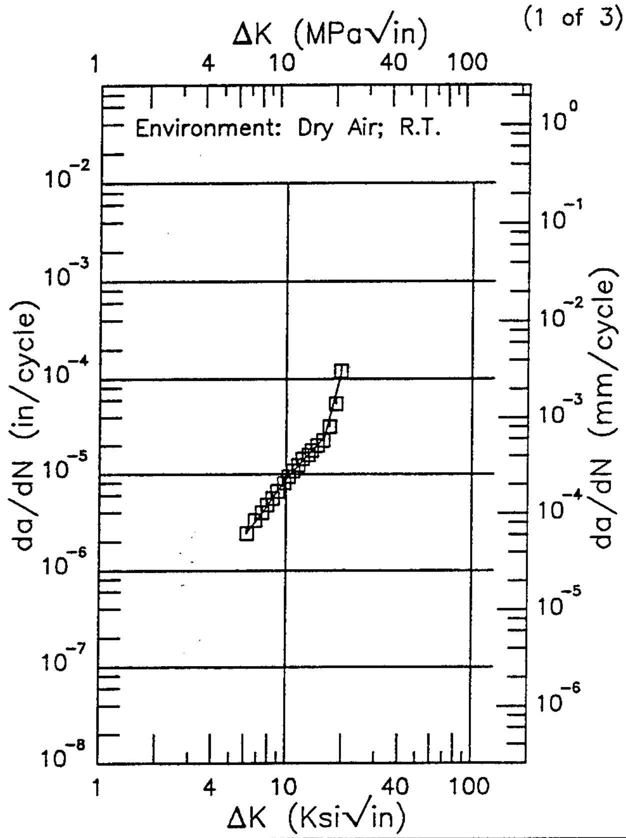
Figure 8.19.3.1.9 (Concluded)

E 7475

Condition/Ht: T61
Form: 0.04 in. Sheet
Specimen Type: CCP (max load specified)
Orientation: T-L
Stress Ratio: 0.33
Frequency: 13.3 Hz

Yield Strength: 72.1 ksi
Ult. Strength: 70.8 – 79.8 ksi
Specimen Thk: 0.042 – 0.045 in.
Specimen Width: 4 in.
Ref: 86842

(1 of 3)



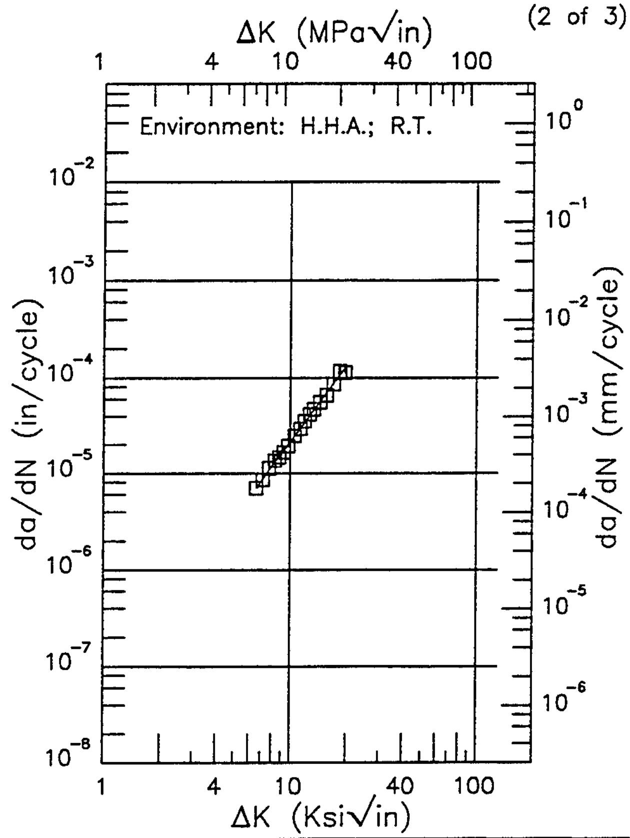
ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
6.16 (min)	2.49
7.	3.36
8.	4.80
9.	6.67
10.	8.87
13.	15.6
16.	24.6
19.58 (max)	115.

RMS % Error 6.67

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

(2 of 3)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
6.60 (min)	7.03
7.	8.26
8.	11.8
9.	16.2
10.	21.3
13.	42.4
16.	73.3
19.57 (max)	125.

RMS % Error 4.38

Life Prediction Ratio Summary

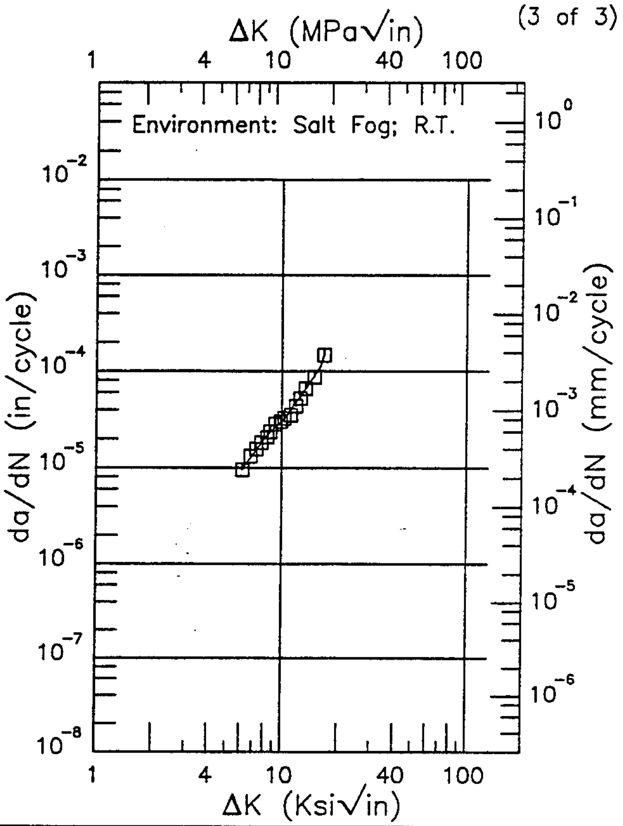
0. .5 .8 1.25 2.

Figure 8.19.3.1.10

Condition/Ht: T61
Form: 0.04 in. Sheet
Specimen Type: CCP (max load specified)
Orientation: T−L
Stress Ratio: 0.33
Frequency: 13.3 Hz

Yield Strength: 72.1 ksi
Ult. Strength: 70.8 − 79.8 ksi
Specimen Thk: 0.042 − 0.045 in.
Specimen Width: 4 in.
Ref: 86842

(3 of 3)

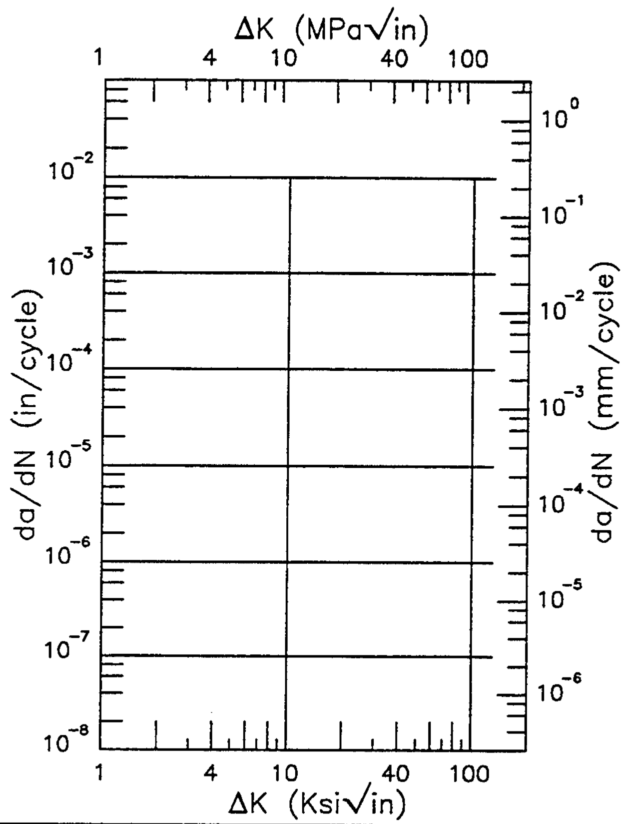


ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
6.08 (min)	9.66
7.	13.9
8.	19.9
9.	25.6
10.	30.0
13.	60.1
16.	112.
16.67 (max)	144.

RMS % Error 4.60

Life Prediction Ratio Summary

0. .5 .8 1.25 2.



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

Figure 8.19.3.1.10 (Concluded)

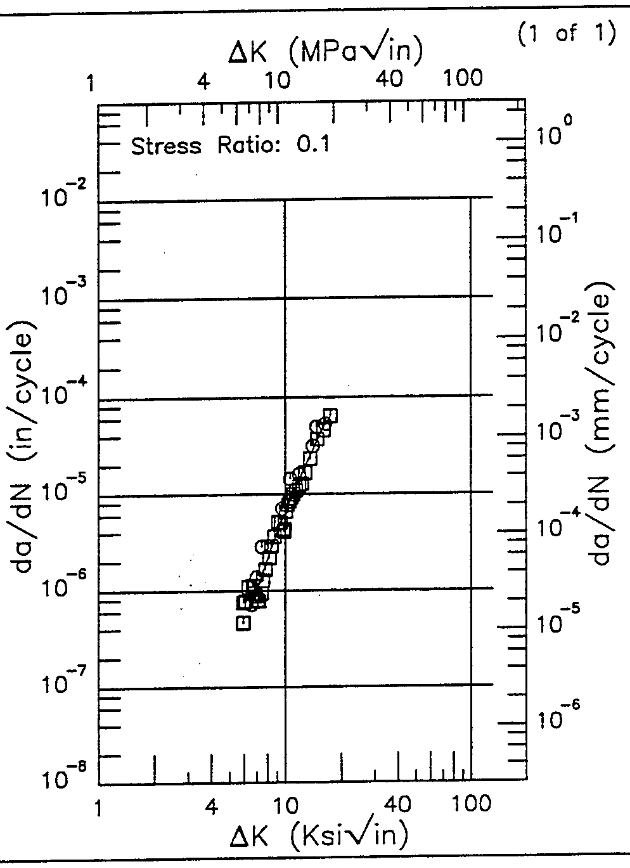
7475

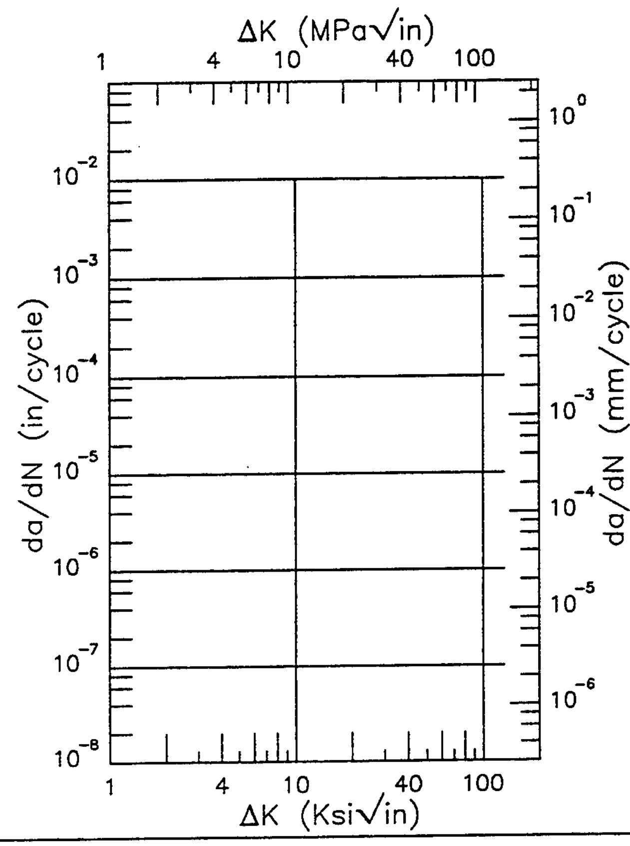
R

Condition/Ht: T61
Form: 1.5 in. Plate
Specimen Type: CT
Orientation: L–T
Frequency: 20 Hz
Environment: LAB AIR; RT

Yield Strength: 73.9 ksi
Ult. Strength: 78.5 ksi
Specimen Thk: 0.65 in.
Specimen Width: 1.49 – 1.5 in.
Ref: 85363

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
5.90 (min)	0.790
6.	0.765
7.	1.01
8.	2.09
9.	4.07
10.	6.53
13.	20.6
16.	50.6
17.32 (max)	61.6

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

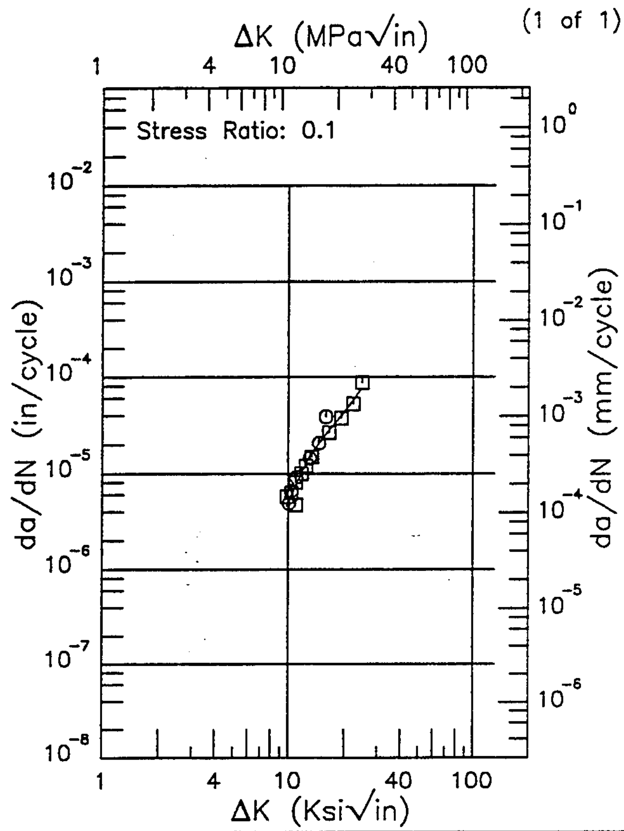
RMS % Error	Life Prediction Ratio Summary
26.97	0. .5 .8 1.25 2.

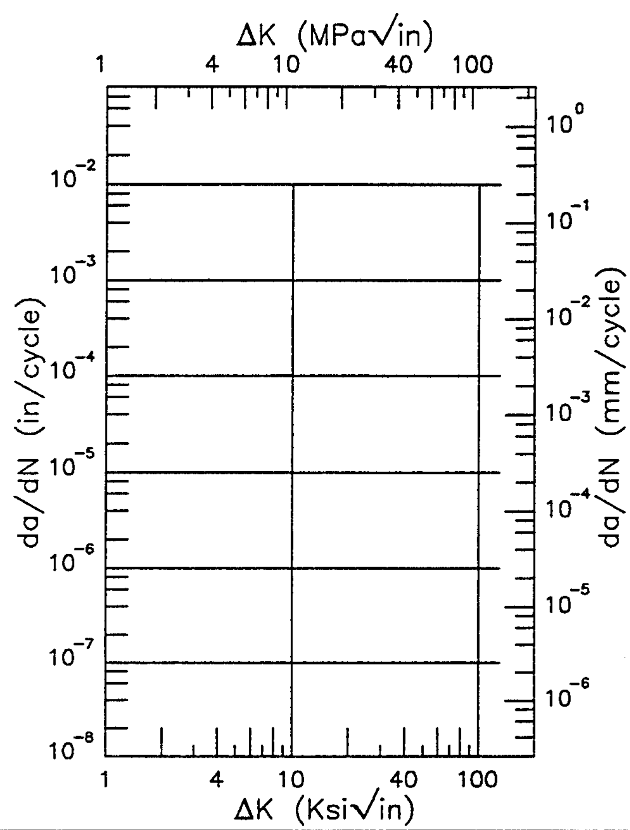
RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

Figure 8.19.3.1.11

Condition/Ht: T6151
Form: 0.09 in. Sheet
Specimen Type: CT
Orientation: L−T
Frequency: 20 Hz
Environment: LAB AIR; RT

Yield Strength: 62.2 ksi
Ult. Strength: 70.2 ksi
Specimen Thk: 0.089 in.
Specimen Width: 1.496 − 1.498 in.
Ref: 85363





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
9.79 (min)	4.55
10.	5.12
13.	15.2
16.	26.3
20.	43.2
24.63 (max)	76.3

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error	Life Prediction Ratio Summary
18.18	0. .5 .8 1.25 2.

RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

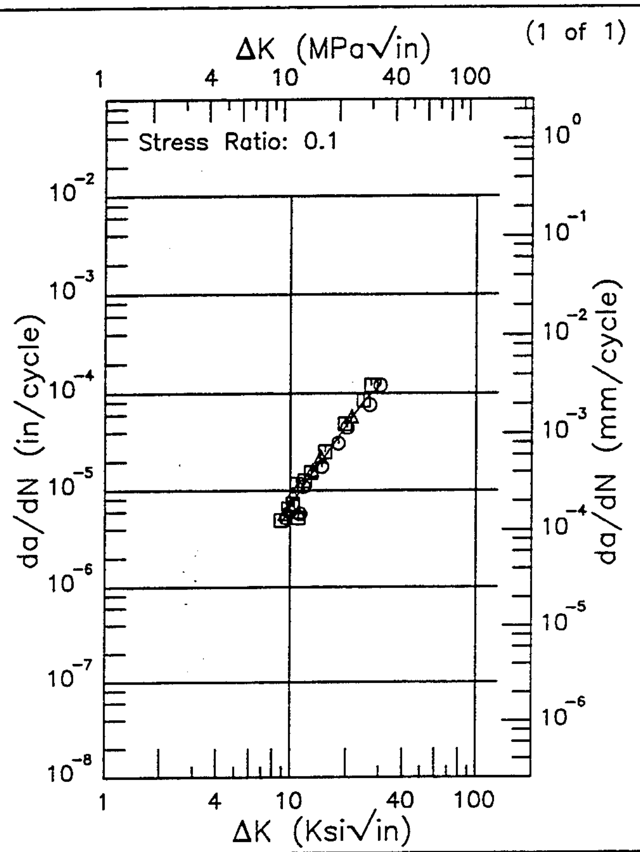
Figure 8.19.3.1.12

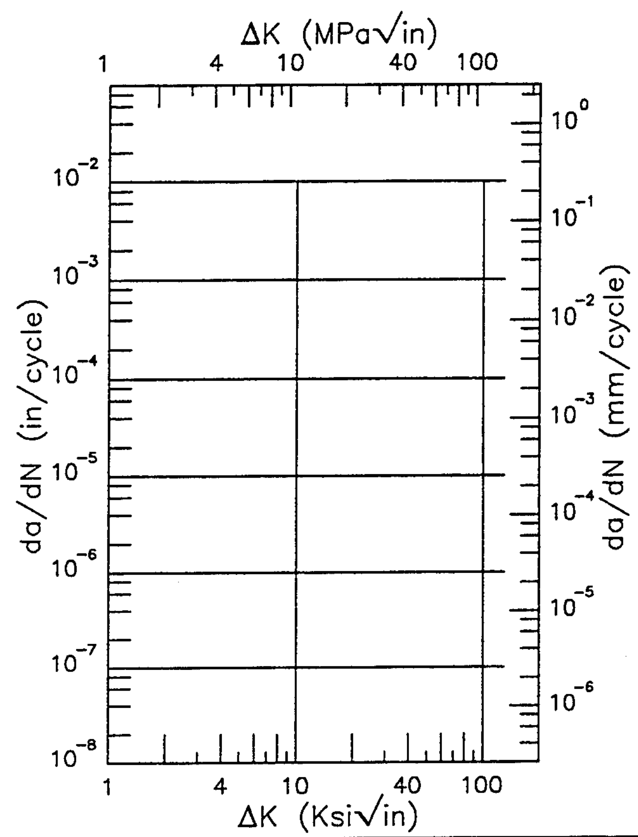
R 7475

Condition/Ht: T6151
Form: 0.09 in. Sheet
Specimen Type: CT
Orientation: T–L
Frequency: 20 Hz
Environment: LAB AIR; RT

Yield Strength: 62.2 ksi
Ult. Strength: 70.2 ksi
Specimen Thk: 0.089 in.
Specimen Width: 1.478 – 1.498 in.
Ref: 85363

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
8.91 (min)	4.56
9.	4.73
10.	6.79
13.	14.8
16.	25.6
20.	46.3
25.	84.2
30.	119.
30.31 (max)	121.

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error
18.21

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

RMS % Error

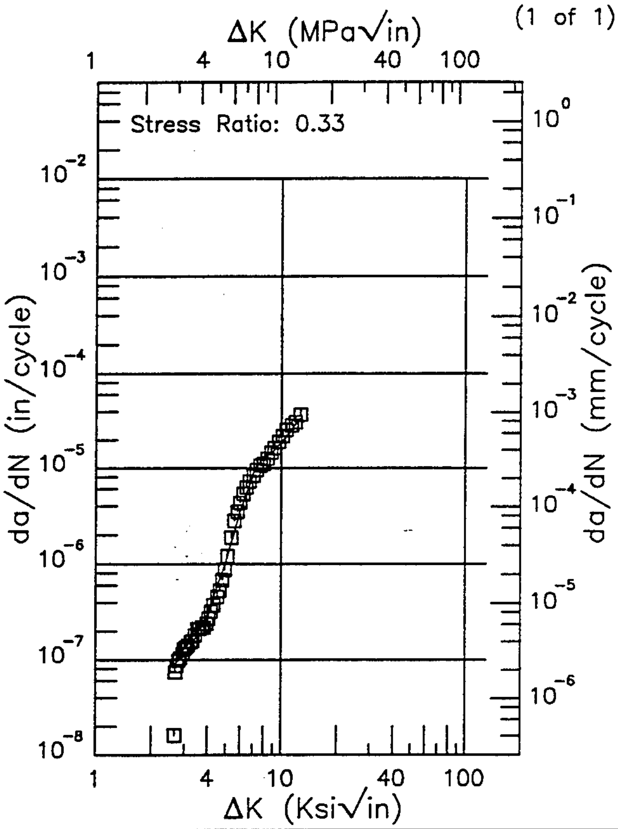
Life Prediction Ratio Summary

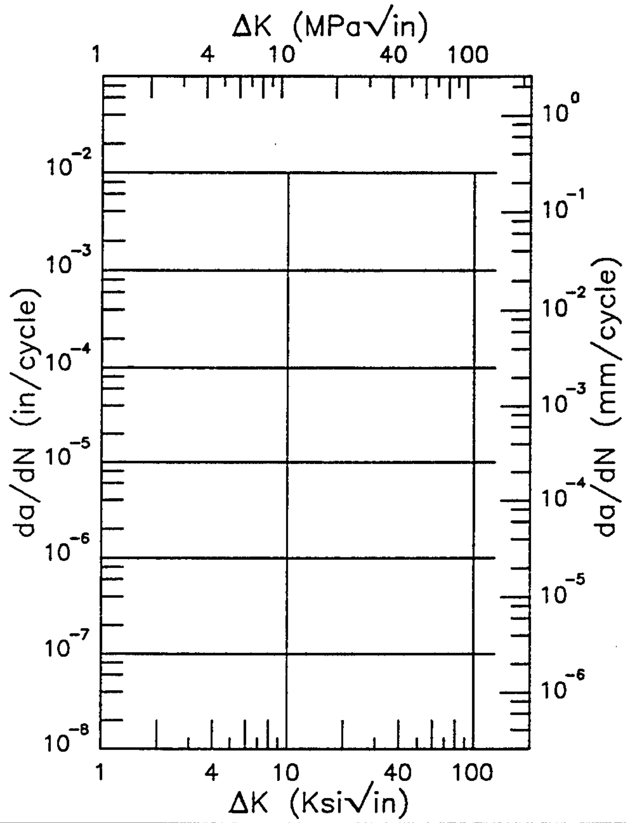
0. .5 .8 1.25 2.

Figure 8.19.3.1.13

Condition/Ht: T651	Yield Strength: 79.6 ksi
Form: 0.75 in. Plate	Ult. Strength: 87.7 ksi
Specimen Type: CT	Specimen Thk: 0.248 in.
Orientation: L–T	Specimen Width: 2.5 in.
Frequency: 25 Hz	Ref: AL002
Environment: LAB AIR; RT	

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
2.66 (min)	0.0878
3.	0.111
3.5	0.175
4.	0.302
5.	1.03
6.	3.52
7.	8.72
8.	13.3
9.	15.2
10.	18.7
12.54 (max)	33.8

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error	Life Prediction Ratio Summary
18.31	0. .5 .8 1.25 2.

RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

Figure 8.19.3.1.14

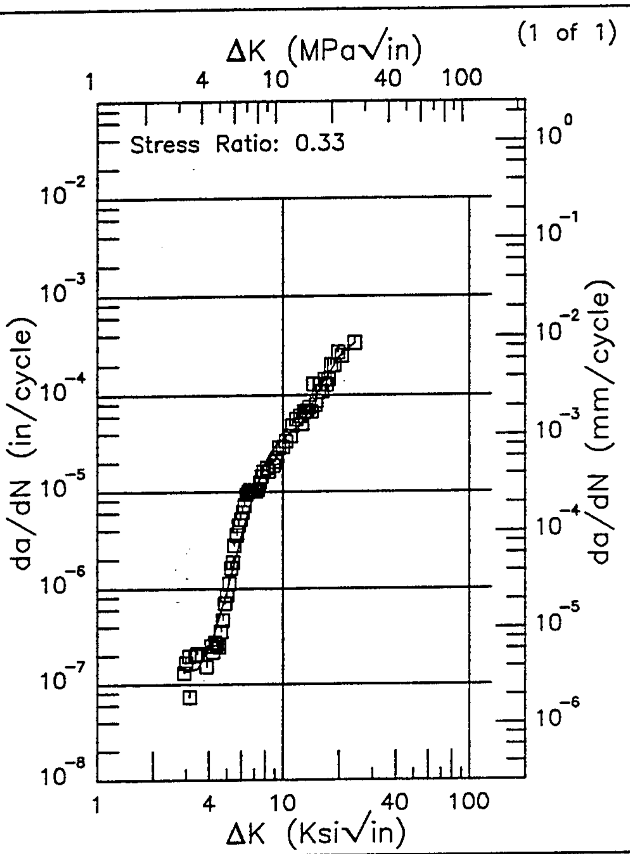
7475

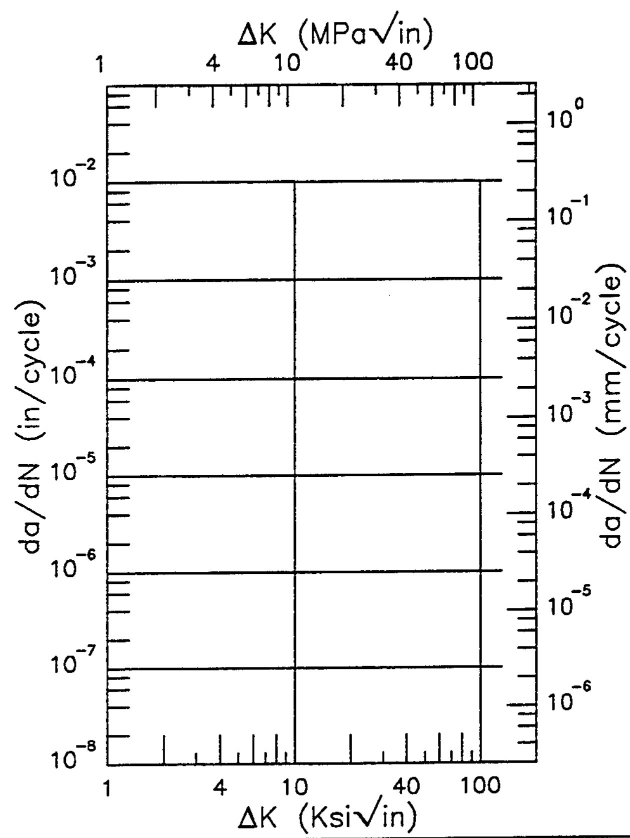
R

Condition/Ht: T651
Form: 0.75 in. Plate
Specimen Type: CT
Orientation: L–T
Frequency:
Environment: H.H.A.; RT

Yield Strength:
Ult. Strength:
Specimen Thk: 0.248 in.
Specimen Width: 2.55 in.
Ref: AL002

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)
2.91 (min)	0.145
3.	0.136
3.5	0.146
4.	0.236
5.	0.931
6.	3.51
7.	9.93
8.	19.9
9.	29.2
10.	35.5
13.	55.0
16.	123.
20.	242.
24.13 (max)	333.

ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)

RMS % Error	Life Prediction Ratio Summary
31.66	0. .5 .8 1.25 2.

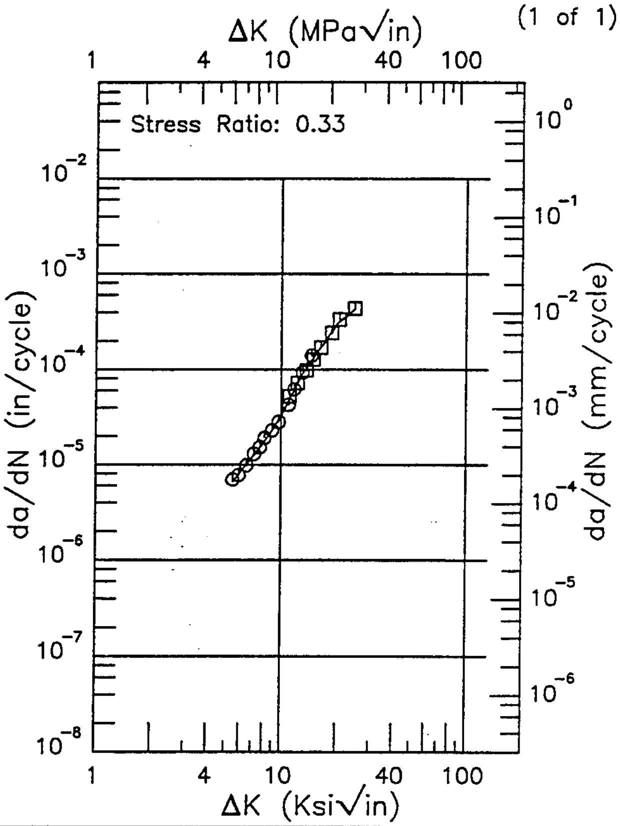
RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

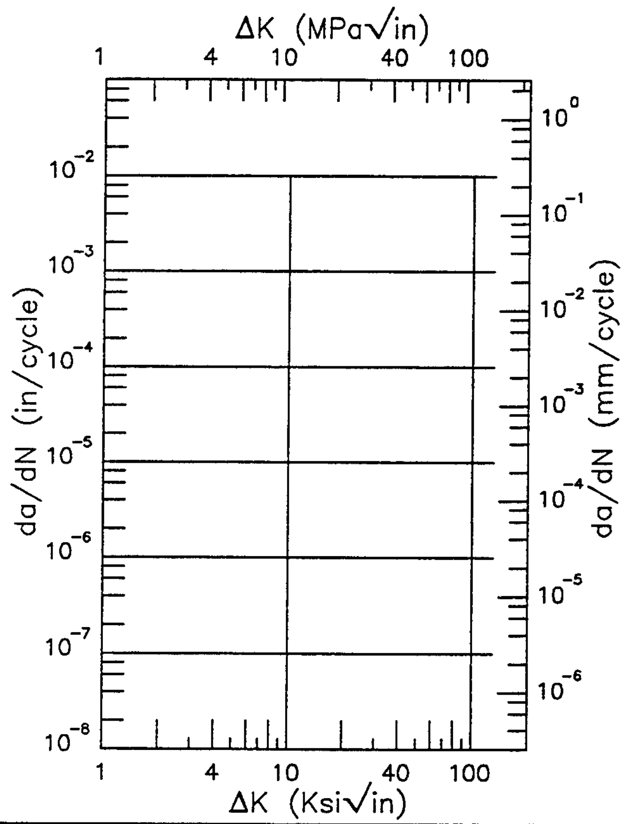
Figure 8.19.3.1.15

Condition/Ht: T651
Form: 0.51 in. Plate
Specimen Type: CCP (max load specified)
Orientation: L–T
Frequency: 5.2 Hz
Environment: H.H.A.; RT

Yield Strength: 74.5 ksi
Ult. Strength: 80 ksi
Specimen Thk: 0.508 in.
Specimen Width: 3.025 – 3.026 in.
Ref: 86213

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
5.49 (min)	6.57
6.	8.23
7.	12.0
8.	17.0
9.	23.8
10.	33.3
13.	88.7
16.	164.
20.	302.
24.79 (max)	430.

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error	Life Prediction Ratio Summary	RMS % Error	Life Prediction Ratio Summary
5.45	0. .5 .8 1.25 2.		0. .5 .8 1.25 2.

Figure 8.19.3.1.16

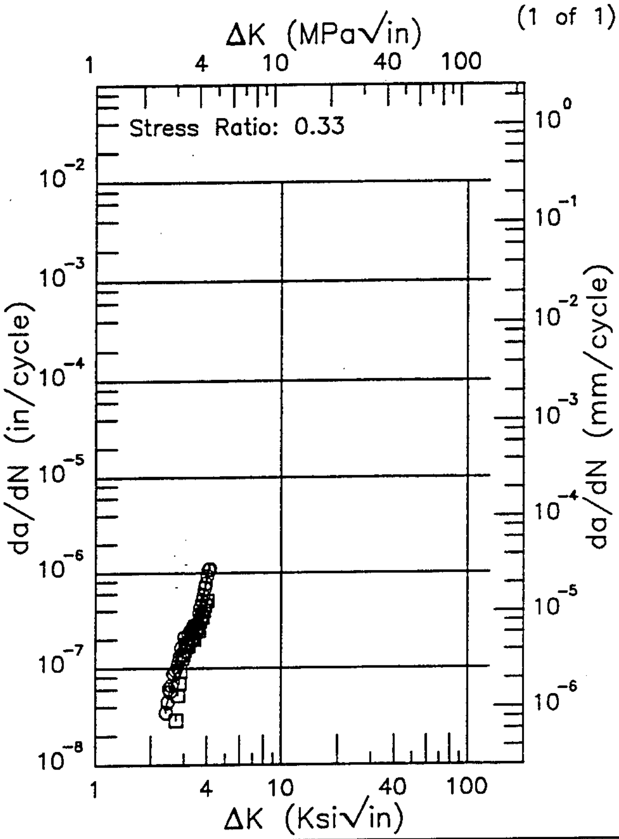
R

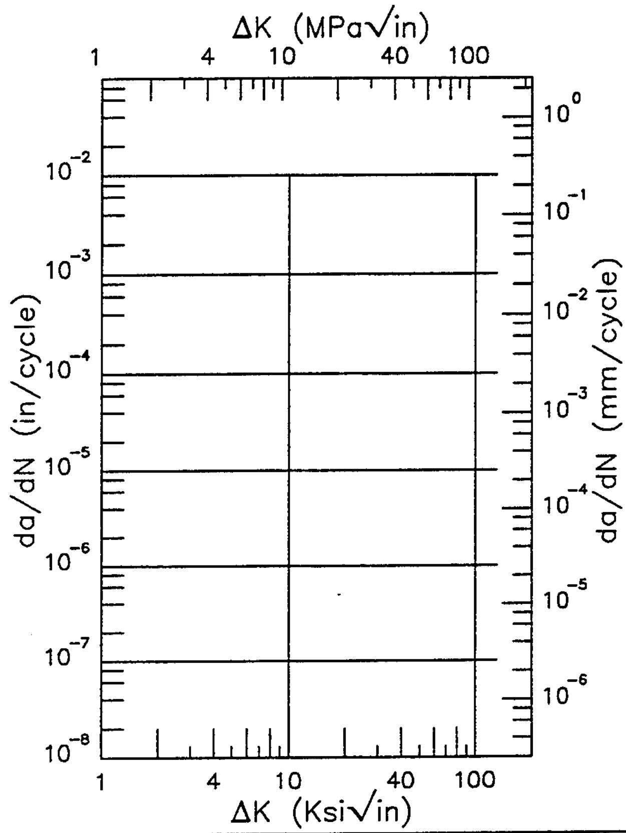
7475

Condition/Ht: T651
Form: 0.75 in. Plate
Specimen Type: WOL
Orientation: L–T
Frequency: 25 Hz
Environment: H.H.A.; RT

Yield Strength:
Ult. Strength:
Specimen Thk: 0.242 – 0.25 in.
Specimen Width: 2.546 – 2.552 in.
Ref: AL003

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)
2.40 (min)	0.0365
2.5	0.0547
3.	0.140
3.5	0.273
4.	0.795
4.13 (max)	1.16

ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)

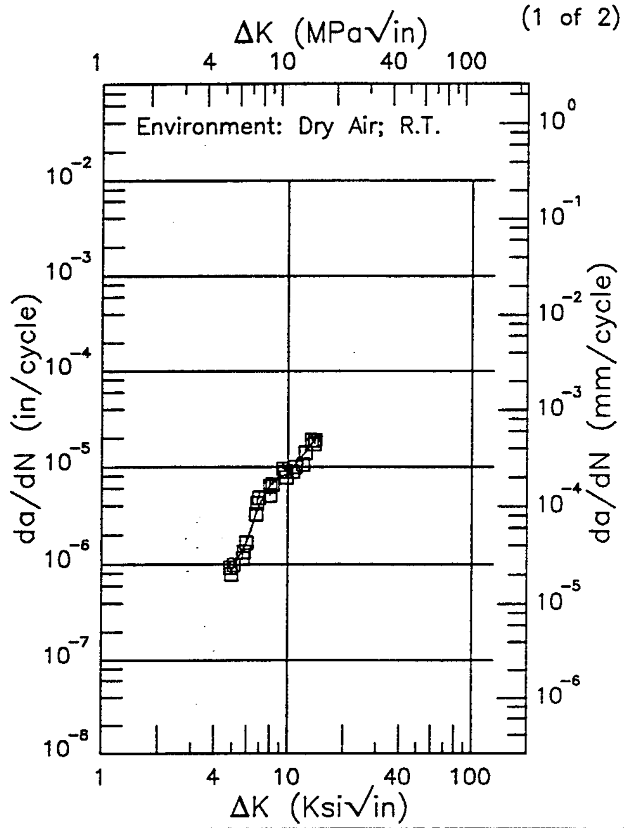
RMS % Error	Life Prediction Ratio Summary
21.42	0. .5 .8 1.25 2.

RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

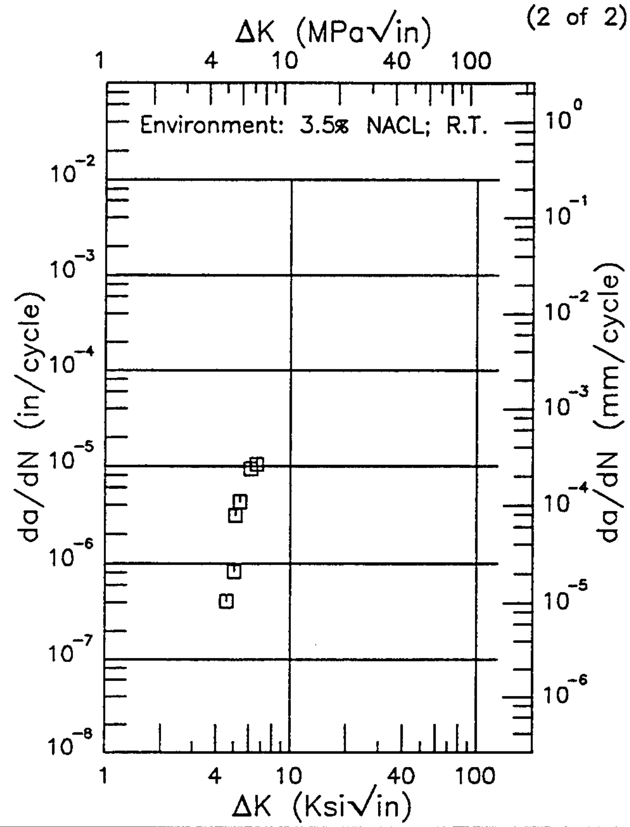
Figure 8.19.3.1.17

Condition/Ht: T651	
Form: 1 in. Plate	Yield Strength:
Specimen Type: DCB	Ult. Strength:
Orientation: T–L	Specimen Thk:
Stress Ratio: 0.1	Specimen Width:
Frequency: 1 Hz	Ref: 88140

(1 of 2)



(2 of 2)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
4.87 (min)	0.899
5.	0.888
6.	1.69
7.	4.08
8.	6.51
9.	7.78
10.	8.52
13.	15.9
13.95 (max)	19.4

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error	Life Prediction Ratio Summary
11.70	0. .5 .8 1.25 2.

RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

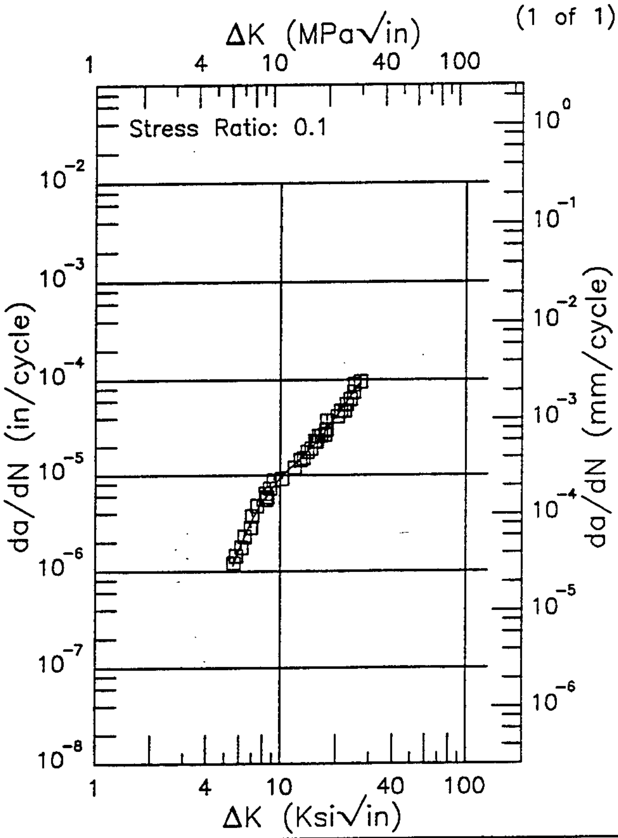
Figure 8.19.3.1.18

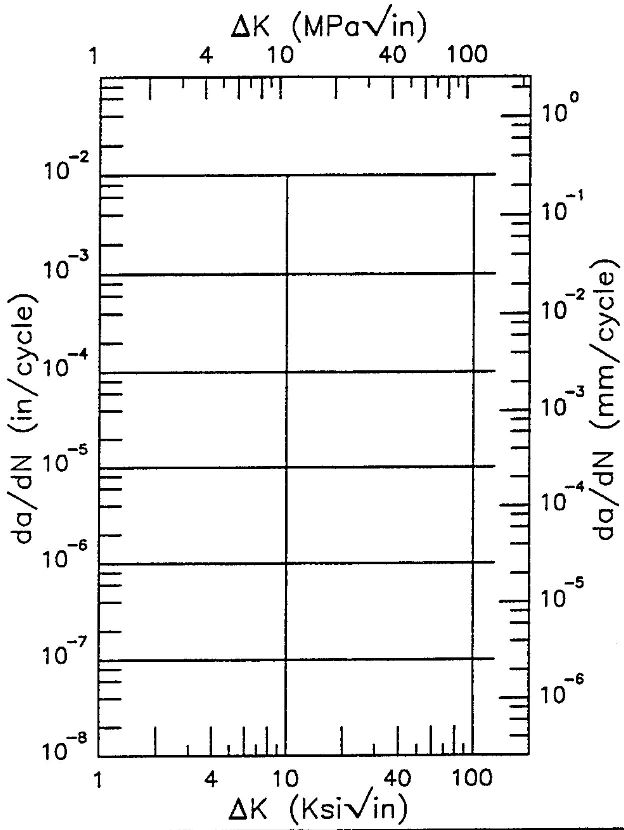
R 7475

Condition/Ht: T651
Form: 1 in. Plate
Specimen Type:
Orientation:
Frequency: 20 Hz
Environment: DRY AIR; RT

Yield Strength:
Ult. Strength:
Specimen Thk: 1 in.
Specimen Width:
Ref: 91332

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
5.60 (min)	1.15
6.	1.68
7.	3.37
8.	5.32
9.	7.34
10.	9.31
13.	15.3
16.	23.2
20.	41.2
25.	77.6
26.91 (max)	94.6

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error 7.92

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

RMS % Error

Life Prediction Ratio Summary

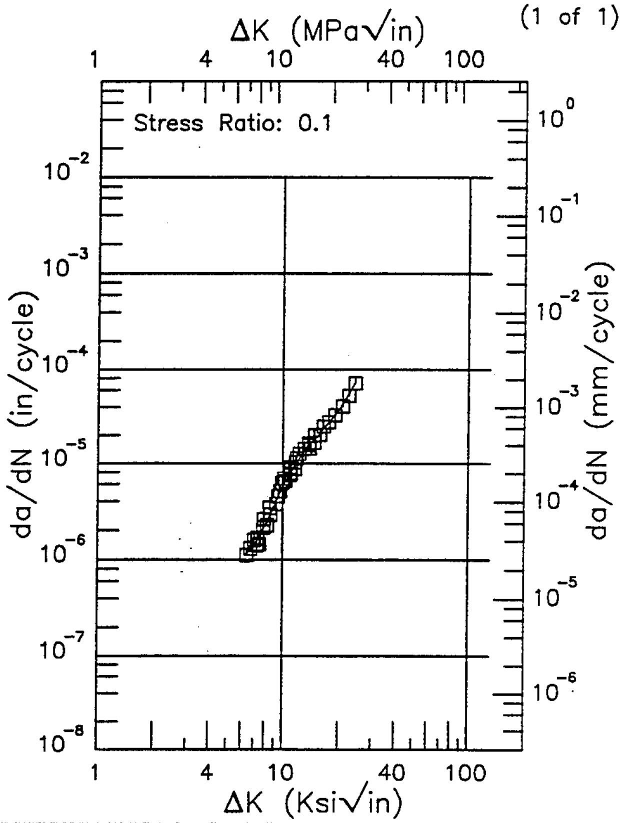
0. .5 .8 1.25 2.

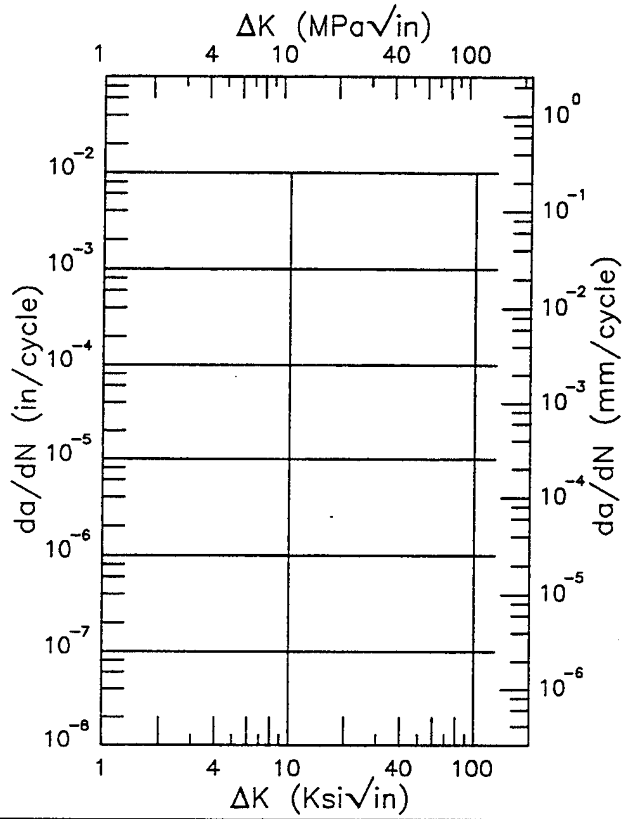
Figure 8.19.3.1.19

Condition/Ht: T651
Form: 0.5 in. Plate
Specimen Type:
Orientation:
Frequency: 20 Hz
Environment: DRY AIR; RT

Yield Strength:
Ult. Strength:
Specimen Thk: 0.5 in.
Specimen Width:
Ref: 91332

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
6.40 (min)	1.14
7.	1.38
8.	2.20
9.	3.64
10.	5.76
13.	13.6
16.	21.9
20.	37.2
24.37 (max)	70.9

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error	Life Prediction Ratio Summary
8.95	0. .5 .8 1.25 2.

RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

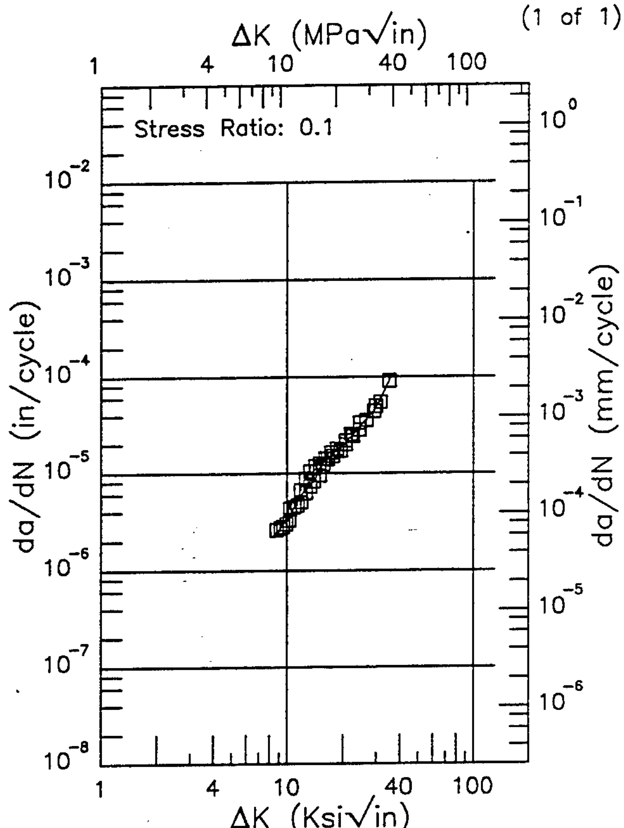
Figure 8.19.3.1.20

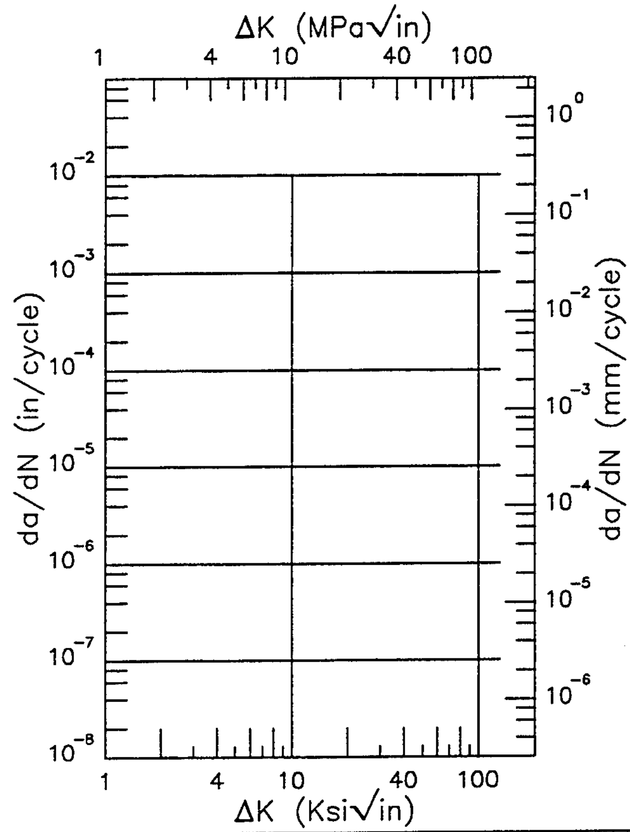
R 7475

Condition/Ht: T651
Form: 1.25 in. Plate
Specimen Type:
Orientation:
Frequency: 20 Hz
Environment: DRY AIR; RT

Yield Strength:
Ult. Strength:
Specimen Thk: 0.125 in.
Specimen Width:
Ref: 91332

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
8.74 (min)	2.42
9.	2.57
10.	3.36
13.	7.68
16.	13.3
20.	19.3
25.	31.4
30.	48.0
35.	89.8
35.06 (max)	90.9

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

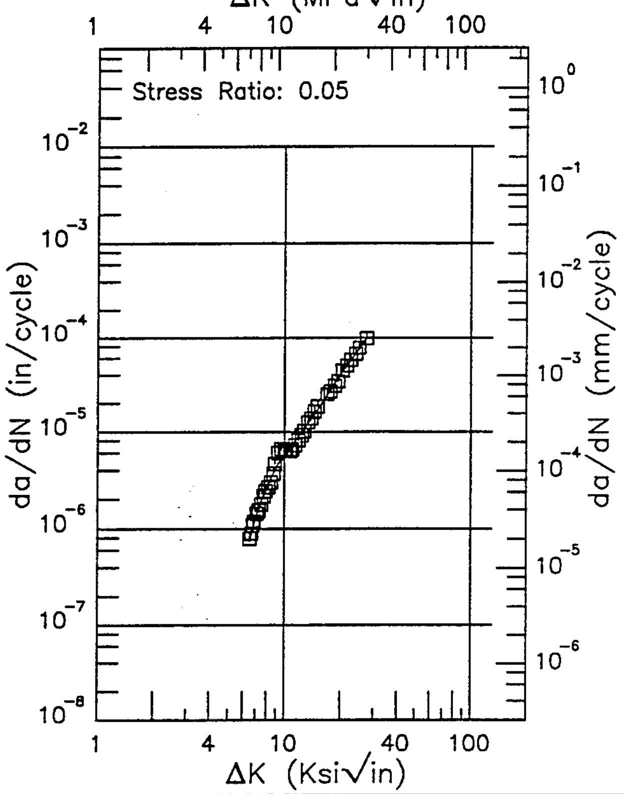
RMS % Error	Life Prediction Ratio Summary
10.62	0. .5 .8 1.25 2.

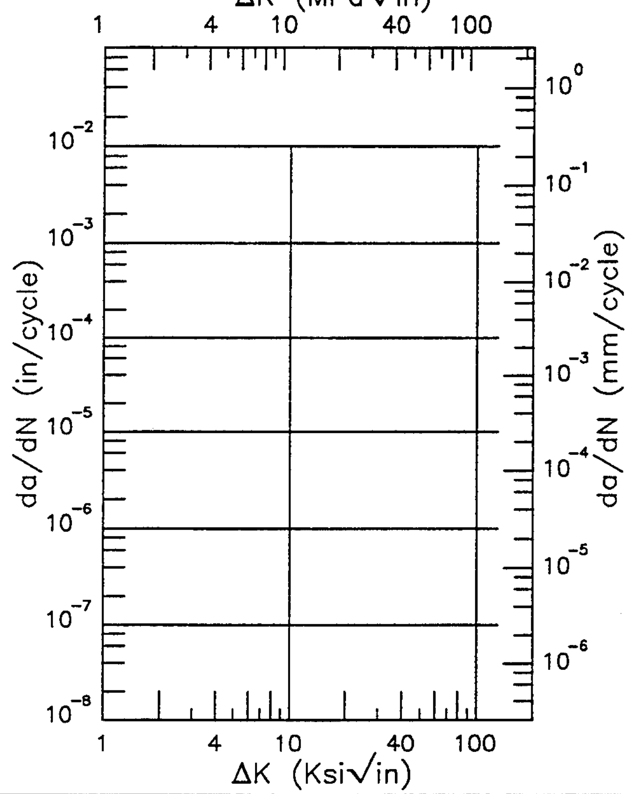
RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

Figure 8.19.3.1.21

Condition/Ht: T7351	
Form: 1.75 in. Plate	Yield Strength: 63.2 ksi
Specimen Type: CT	Ult. Strength: 73.7 ksi
Orientation: L–T	Specimen Thk: 0.246 in.
Frequency: 1 Hz	Specimen Width: 2 in.
Environment: DIST WATER; RT	Ref: DA004

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
6.52 (min)	0.745
7.	1.25
8.	2.68
9.	4.32
10.	5.97
13.	11.3
16.	20.5
20.	41.0
25.	75.5
27.27 (max)	99.0

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error	Life Prediction Ratio Summary
9.17	0. .5 .8 1.25 2.

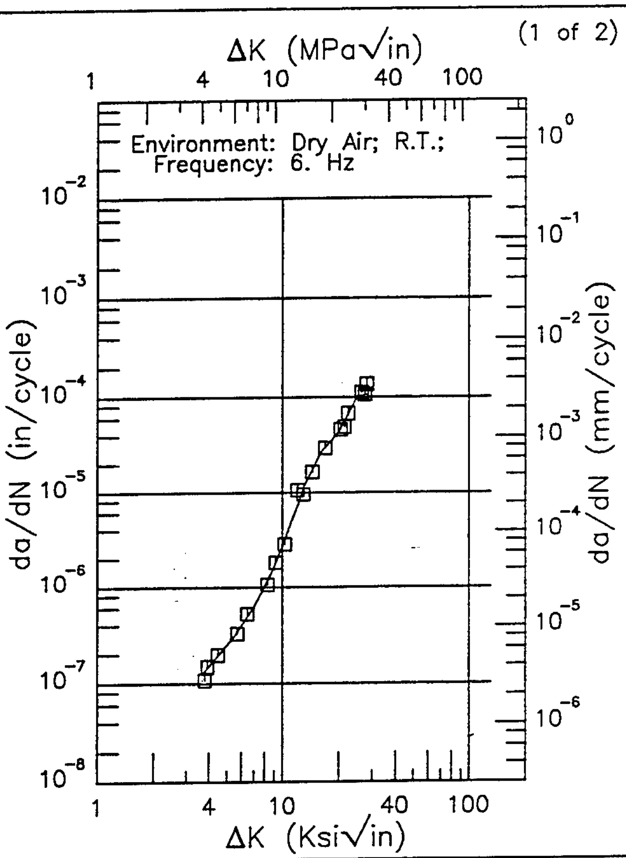
RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

Figure 8.19.3.1.22

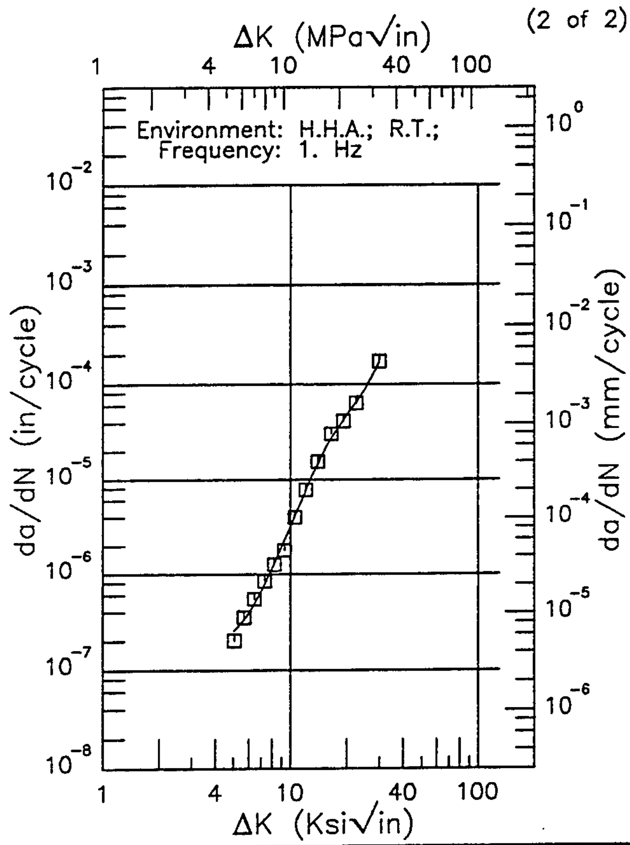
EF 7475

Condition/Ht: T7351	Yield Strength: 59.5 ksi
Form: 3 in. Plate	Ult. Strength: 69.1 ksi
Specimen Type: CT	Specimen Thk: 0.744 – 0.748 in.
Orientation: L–T	Specimen Width: 5.006 in.
Stress Ratio: 0.1	Ref: GD006

(1 of 2)



(2 of 2)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
3.78 (min)	0.131
4.	0.149
5.	0.247
6.	0.391
7.	0.618
8.	0.993
9.	1.63
10.	2.71
13.	11.3
16.	26.9
20.	43.5
25.	102.
28.02 (max)	106.

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
5.04 (min)	0.255
6.	0.384
7.	0.653
8.	1.13
9.	1.93
10.	3.17
13.	10.7
16.	24.8
20.	48.1
25.	87.0
29.75 (max)	169.

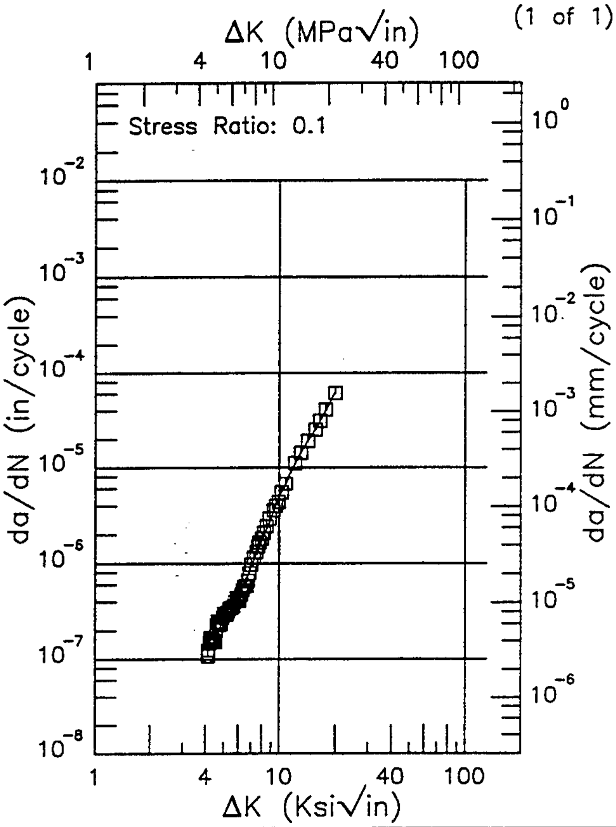
RMS % Error	Life Prediction Ratio Summary
13.76	0. .5 .8 1.25 2.

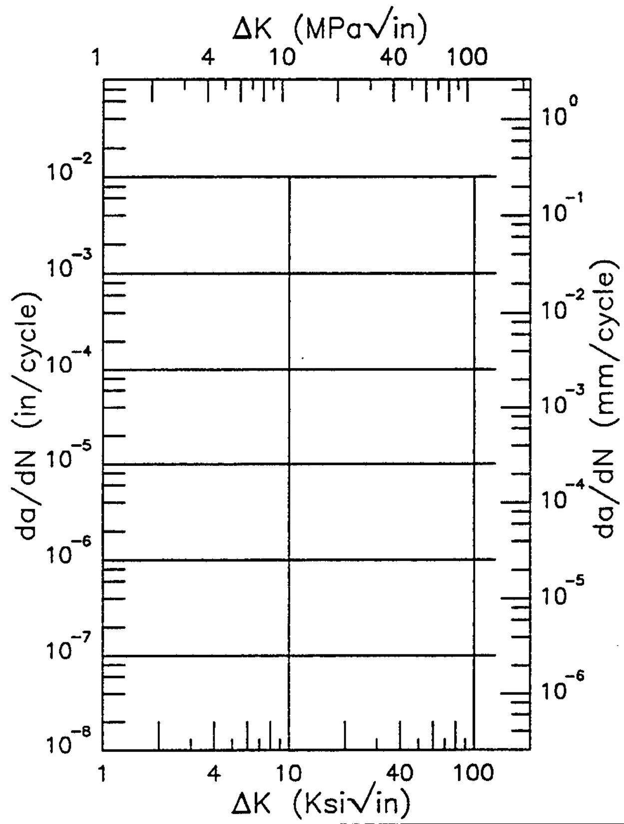
RMS % Error	Life Prediction Ratio Summary
10.38	0. .5 .8 1.25 2.

Figure 8.19.3.1.23

Condition/Ht: T7351
Form: 1.75 in. Plate
Specimen Type: CT
Orientation: L–T
Frequency: 10 Hz
Environment: LAB AIR; RT

Yield Strength: 63.2 ksi
Ult. Strength: 73.7 ksi
Specimen Thk: 0.498 in.
Specimen Width: 1.998 in.
Ref: DA004



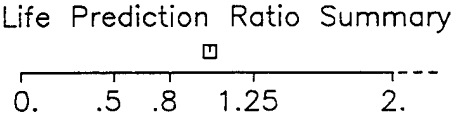


ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
4.08 (min)	0.139
5.	0.247
6.	0.475
7.	0.903
8.	1.67
9.	2.99
10.	4.99
13.	14.2
16.	27.7
19.79 (max)	60.7

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error
10.67

Life Prediction Ratio Summary



RMS % Error

Life Prediction Ratio Summary

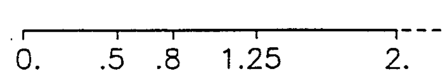


Figure 8.19.3.1.24

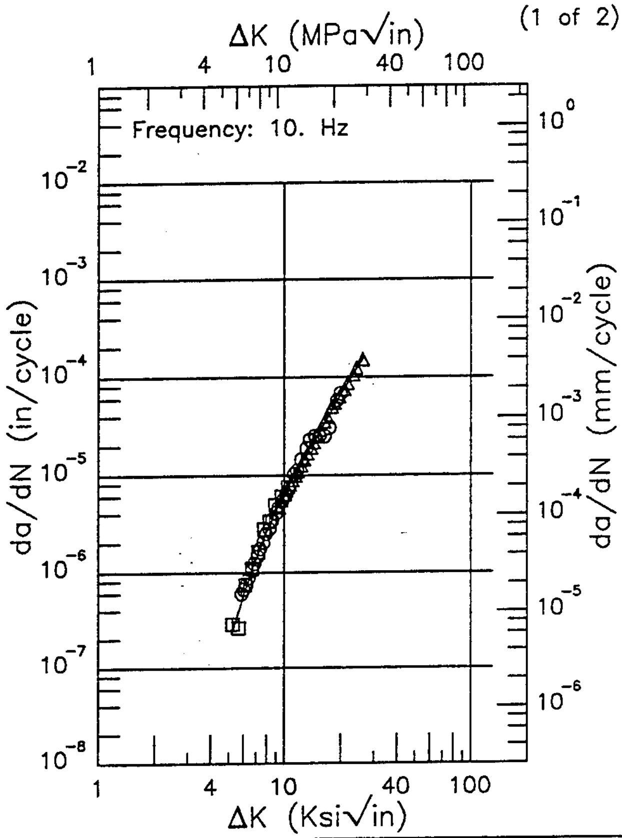
7475

F

Condition/Ht: T7351
Form: 1.75 in. Plate
Specimen Type: CT
Orientation: L–T
Stress Ratio: 0.1
Environment: LAB AIR; RT

Yield Strength: 63.2 ksi
Ult. Strength: 73.7 ksi
Specimen Thk: 0.24 – 0.251 in.
Specimen Width: 1.999 – 2 in.
Ref: DA004;NC005

(1 of 2)

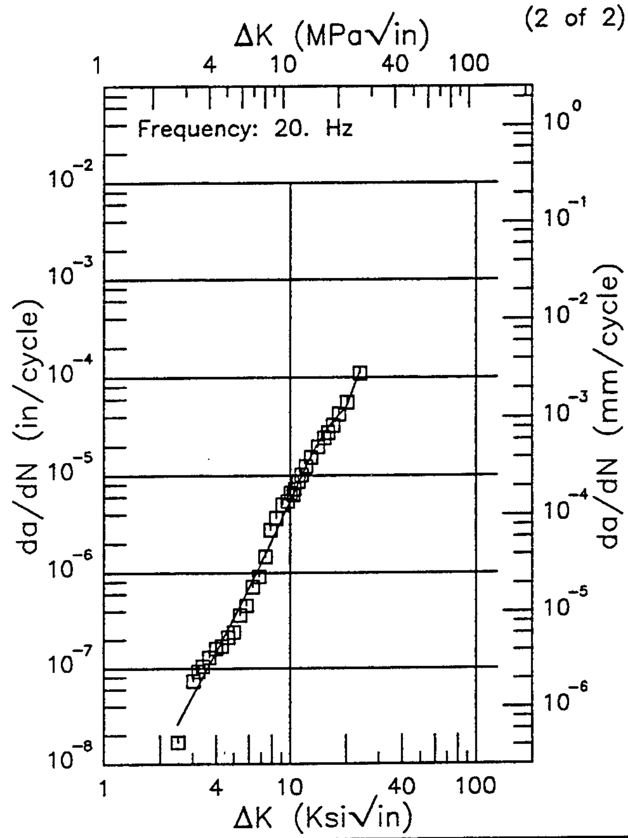


ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)
5.21 (min)	0.231
6.	0.577
7.	1.36
8.	2.59
9.	4.28
10.	6.44
13.	16.0
16.	31.5
20.	66.0
25.	134.
26.12 (max)	149.

RMS % Error: 10.63

Life Prediction Ratio Summary: 0. .5 .8 1.25 2.

(2 of 2)



ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)
2.49 (min)	0.0260
2.5	0.0265
3.	0.0519
3.5	0.0915
4.	0.150
5.	0.343
6.	0.688
7.	1.26
8.	2.15
9.	3.51
10.	5.49
13.	16.2
16.	31.2
20.	49.7
23.67 (max)	111.

RMS % Error: 20.79

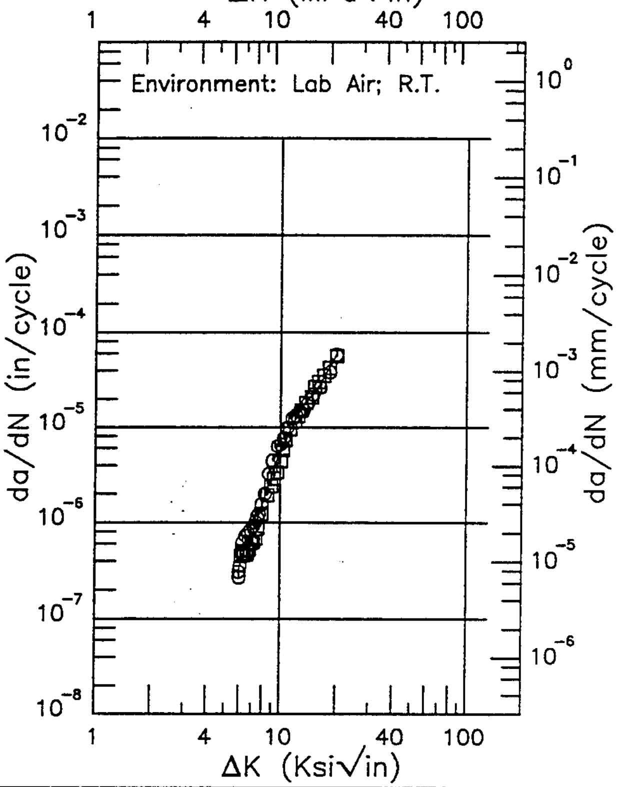
Life Prediction Ratio Summary: 0. .5 .8 1.25 2.

Figure 8.19.3.1.25

Condition/Ht: T7351
Form: 1.5 in. Plate
Specimen Type: CT
Orientation: L–T
Stress Ratio: 0.1
Frequency: 20 Hz

Yield Strength: 62.2 ksi
Ult. Strength: 70.2 ksi
Specimen Thk: 0.65 in.
Specimen Width: 1.5 in.
Ref: 85363

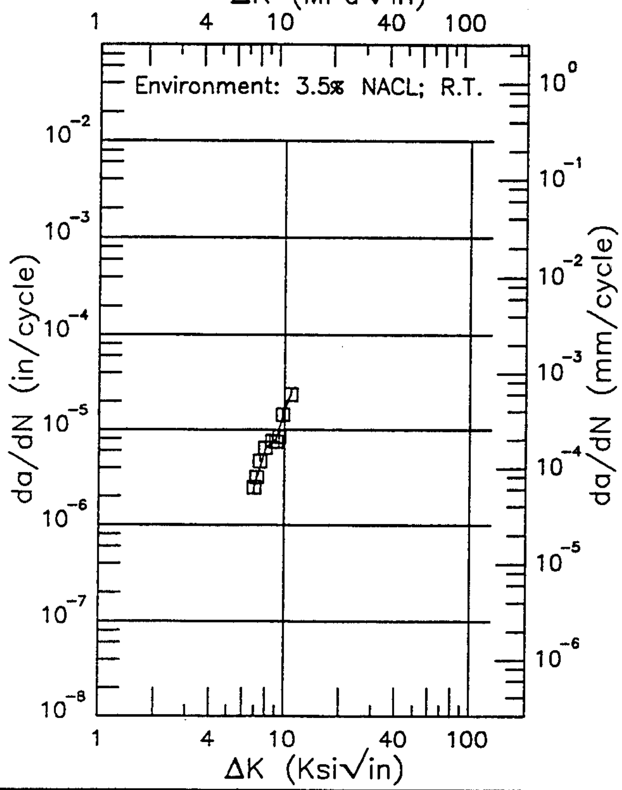
(1 of 2)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
5.95 (min)	0.383
6.	0.390
7.	0.707
8.	1.53
9.	3.15
10.	5.65
13.	16.0
16.	27.7
19.80 (max)	57.8

RMS % Error	Life Prediction Ratio Summary
17.70	0. .5 .8 1.25 2.

(2 of 2)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
6.90 (min)	2.14
7.	2.70
8.	6.38
9.	8.00
10.	15.9
10.75 (max)	23.7

RMS % Error	Life Prediction Ratio Summary
11.75	0. .5 .8 1.25 2.

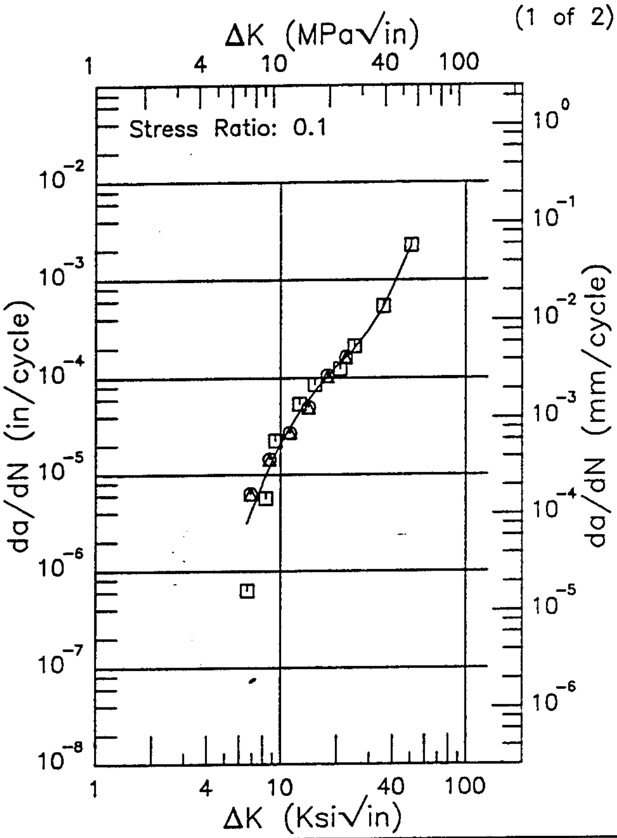
Figure 8.19.3.1.26

R — 7475

Condition/Ht: T7351
Form: 3 in. Plate
Specimen Type: CT
Orientation: L–T
Frequency: 1 Hz
Environment: S.T.W.; RT

Yield Strength: 59.5 ksi
Ult. Strength: 69.1 ksi
Specimen Thk: 0.751 – 0.759 in.
Specimen Width: 4.991 – 4.999 in.
Ref: GD006

(1 of 2)

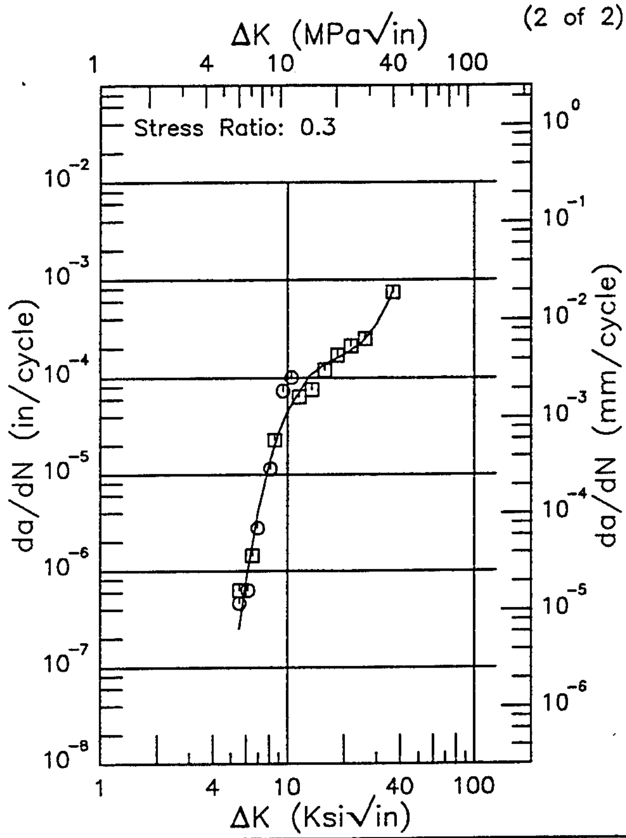


ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
6.61 (min)	3.14
7.	4.30
8.	8.37
9.	14.0
10.	21.1
13.	48.6
16.	82.1
20.	132.
25.	205.
30.	310.
35.	494.
40.	828.
50.	2119.
50.66 (max)	2230.

RMS % Error: 30.67

Life Prediction Ratio Summary: 0. .5 .8 1.25 2.

(2 of 2)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
5.51 (min)	0.252
6.	0.783
7.	4.20
8.	12.8
9.	27.3
10.	46.0
13.	103.
16.	141.
20.	174.
25.	230.
30.	350.
35.	621.
36.44 (max)	753.

RMS % Error: 56.66

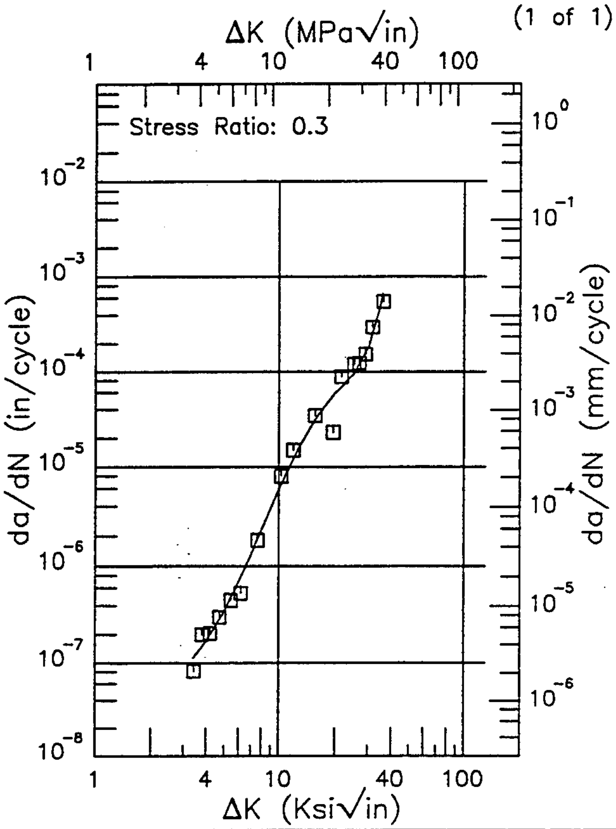
Life Prediction Ratio Summary: 0. .5 .8 1.25 2.

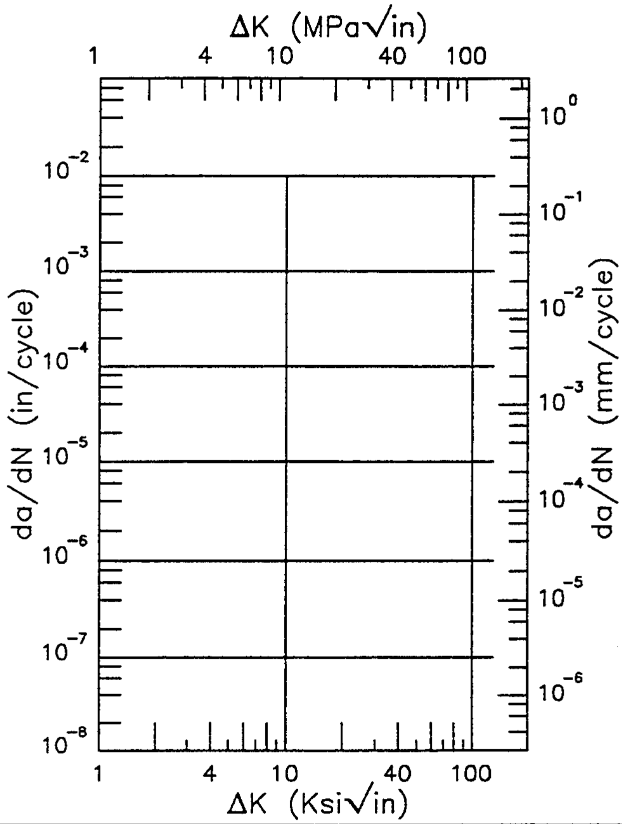
Figure 8.19.3.1.27

Condition/Ht: T7351
Form: 3 in. Plate
Specimen Type: CT
Orientation: L–T
Frequency: 6 Hz
Environment: DRY AIR; RT

Yield Strength: 59.5 ksi
Ult. Strength: 69.1 ksi
Specimen Thk: 0.75 in.
Specimen Width: 5 in.
Ref: GD006

(1 of 1)



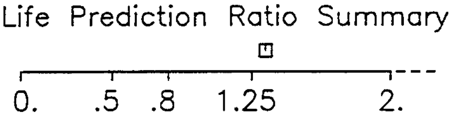


ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)
3.40 (min)	0.114
3.5	0.121
4.	0.169
5.	0.344
6.	0.688
7.	1.30
8.	2.28
9.	3.78
10.	5.89
13.	16.6
16.	33.5
20.	59.1
25.	93.6
30.	183.
35.	521.
35.96 (max)	666.

ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)

RMS % Error
24.06

Life Prediction Ratio Summary



RMS % Error

Life Prediction Ratio Summary

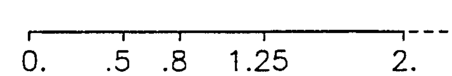


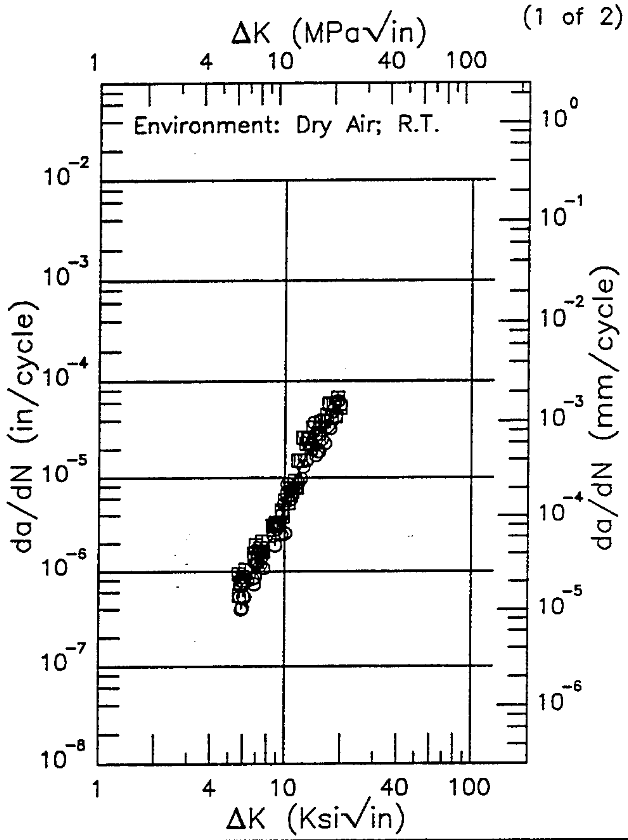
Figure 8.19.3.1.28

E 7475

Condition/Ht: T7351
Form: 1 – 4 in. Plate
Specimen Type: CT
Orientation: L–T
Stress Ratio: 0.33
Frequency: 2 – 20 Hz

Yield Strength: 52.6 – 59.6 ksi
Ult. Strength: 63.8 – 70 ksi
Specimen Thk: 1 in.
Specimen Width: 3.805 in.
Ref: AL001

(1 of 2)



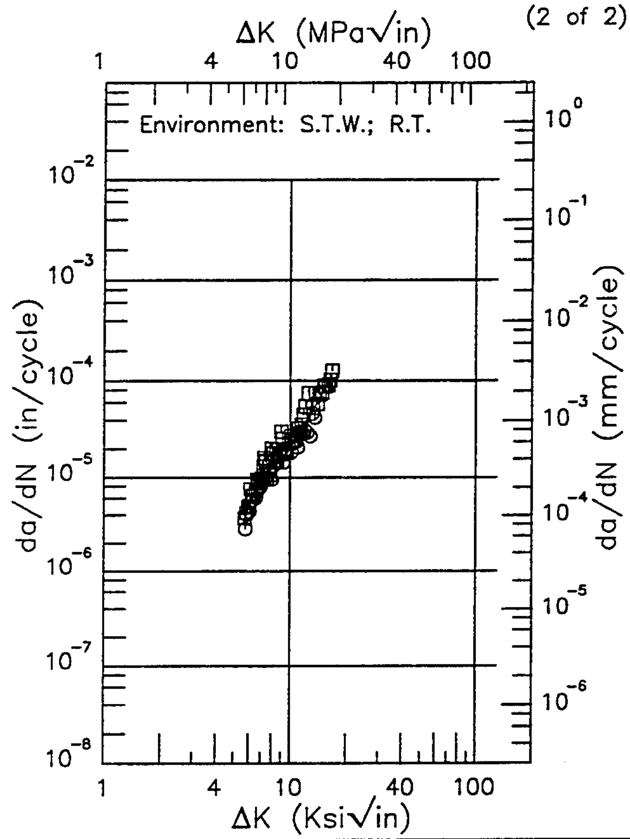
ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)
5.63 (min)	0.611
6.	0.732
7.	1.14
8.	1.78
9.	2.89
10.	4.94
13.	18.0
16.	33.2
19.79 (max)	58.9

RMS % Error 25.15

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

(2 of 2)



ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)
5.70 (min)	3.43
6.	4.76
7.	9.70
8.	14.2
9.	18.1
10.	22.2
13.	46.5
16.	97.7
16.77 (max)	113.

RMS % Error 20.35

Life Prediction Ratio Summary

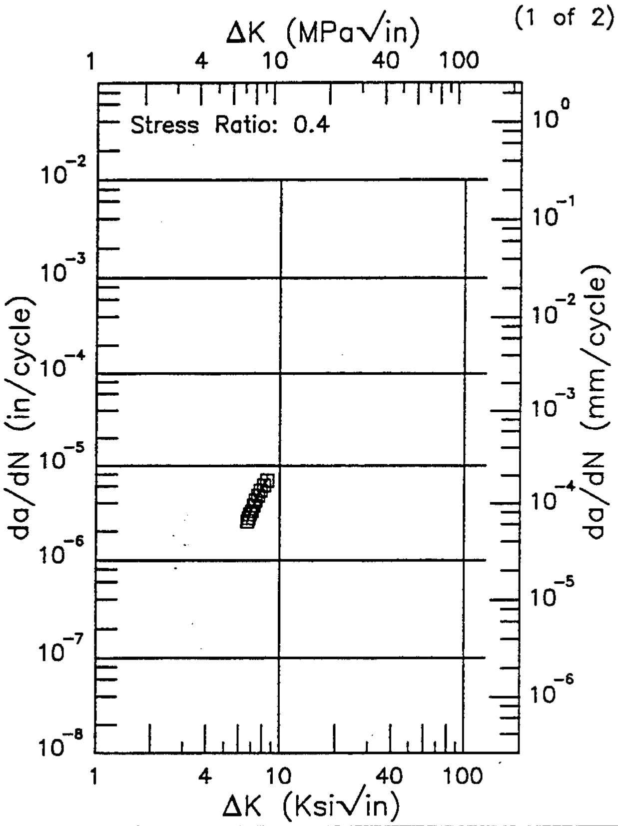
0. .5 .8 1.25 2.

Figure 8.19.3.1.29

Condition/Ht: T7351
Form: 1.75 in. Plate
Specimen Type: CT
Orientation: L–T
Frequency: 5 Hz
Environment: LAB AIR; RT

Yield Strength: 63.2 ksi
Ult. Strength: 73.7 ksi
Specimen Thk: 0.499 in.
Specimen Width: 1.999 in.
Ref: DA004

(1 of 2)



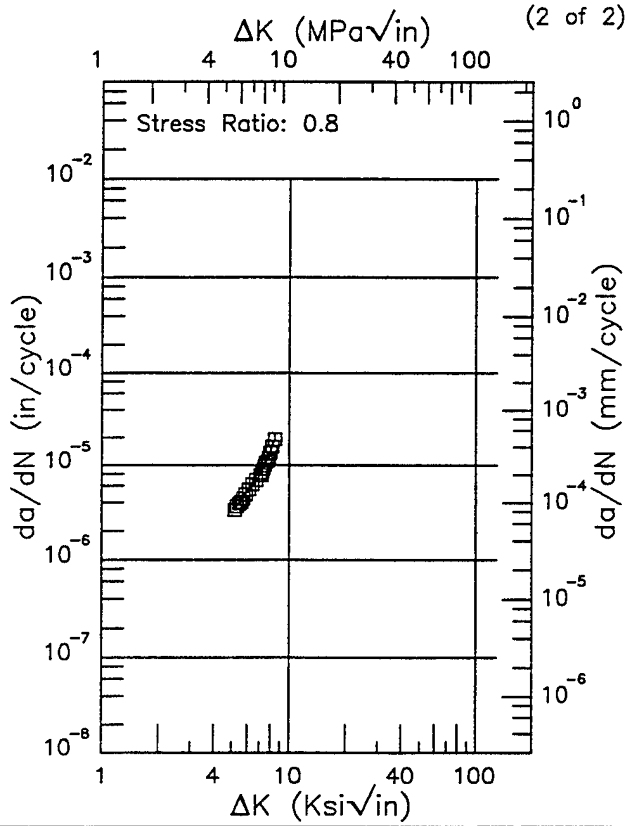
ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)
6.64 (min)	2.48
7.	3.23
8.	5.71
8.48 (max)	6.79

RMS % Error: 1.84

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

(2 of 2)



ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)
5.17 (min)	3.40
6.	5.13
7.	7.72
8.	14.0
8.37 (max)	18.6

RMS % Error: 3.26

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

Figure 8.19.3.1.30

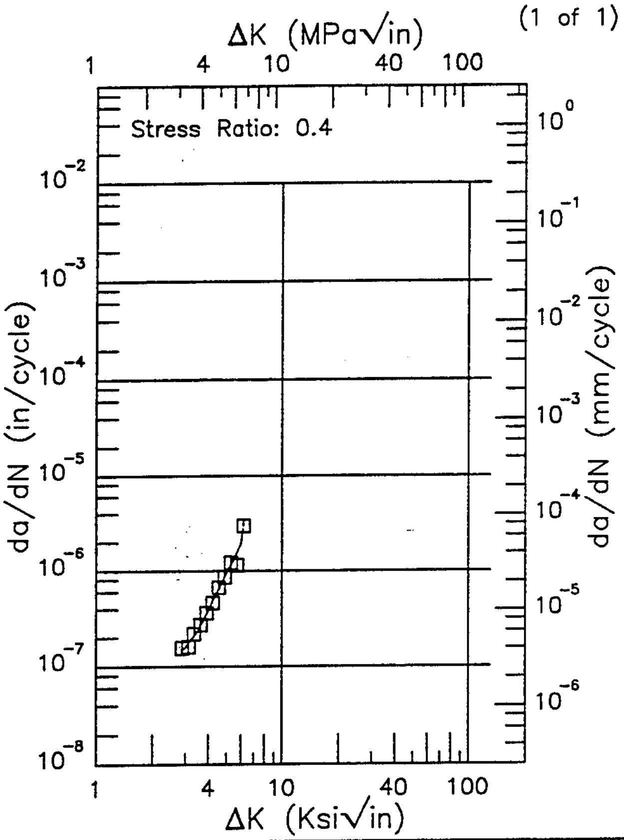
7475

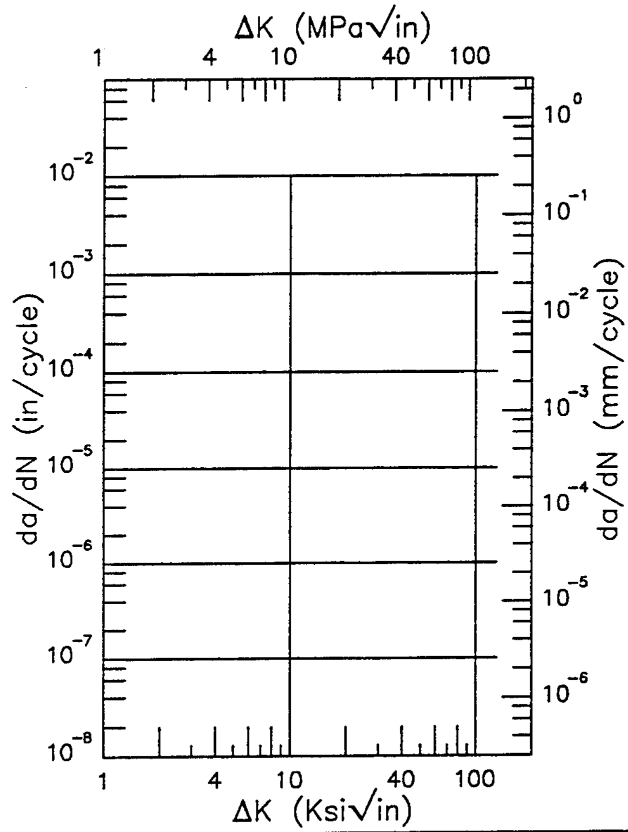
R

Condition/Ht: T7351
Form: 1.75 in. Plate
Specimen Type: CT
Orientation: L–T
Frequency: 5 – 15 Hz
Environment: LAB AIR; RT

Yield Strength: 63.2 ksi
Ult. Strength: 73.7 ksi
Specimen Thk: 1.502 in.
Specimen Width: 2.999 in.
Ref: DA004

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)
2.87 (min)	0.146
3.	0.159
3.5	0.234
4.	0.383
5.	0.949
6.	1.93
6.16 (max)	2.81

ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)

RMS % Error	Life Prediction Ratio Summary
9.59	0. .5 .8 1.25 2.

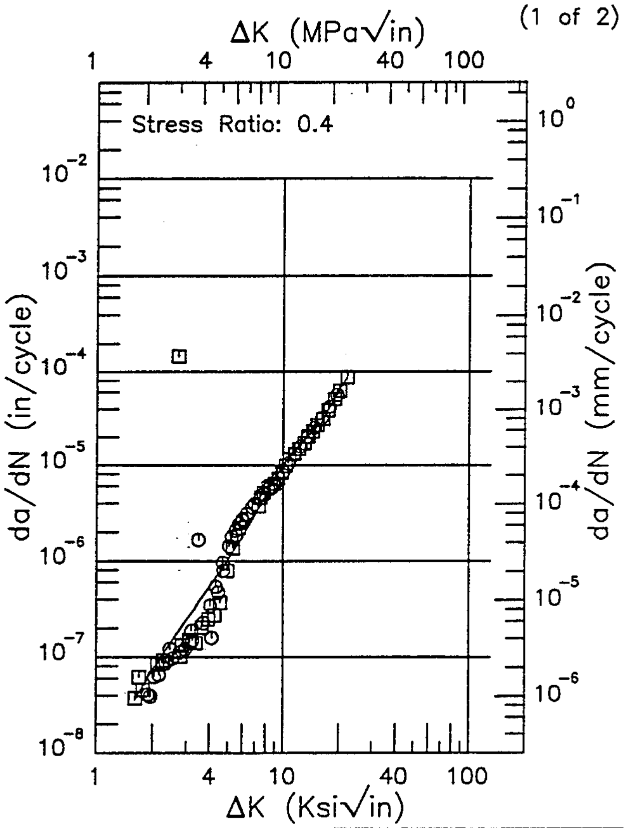
RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

Figure 8.19.3.1.31

Condition/Ht: T7351
Form: 1.75 in. Plate
Specimen Type: CT
Orientation: L–T
Frequency: 20 Hz
Environment: LAB AIR; RT

Yield Strength: 68.8 ksi
Ult. Strength:
Specimen Thk: 0.248 – 0.25 in.
Specimen Width: 1.993 – 2.005 in.
Ref: DA005

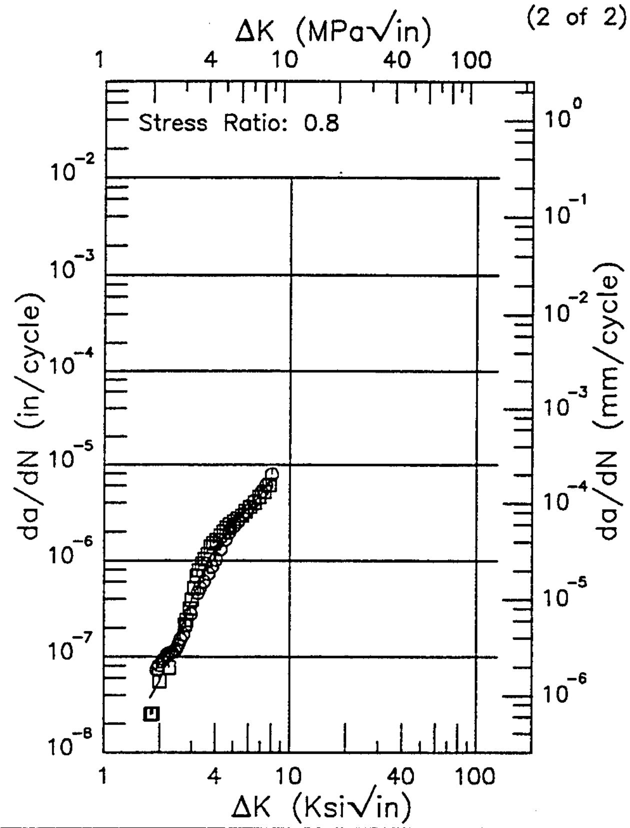
(1 of 2)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
1.61 (min)	0.0359
2.	0.0742
2.5	0.145
3.	0.244
3.5	0.375
4.	0.544
5.	1.03
6.	1.82
7.	3.04
8.	4.85
9.	7.25
10.	10.1
13.	18.5
16.	28.3
20.	64.8
21.97 (max)	84.0

RMS % Error	Life Prediction Ratio Summary
>100.0	0. .5 .8 1.25 2.

(2 of 2)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
1.78 (min)	0.0375
2.	0.0566
2.5	0.157
3.	0.392
3.5	0.804
4.	1.34
5.	2.43
6.	3.47
7.	4.77
7.99 (max)	7.22

RMS % Error	Life Prediction Ratio Summary
20.94	0. .5 .8 1.25 2.

Figure 8.19.3.1.32

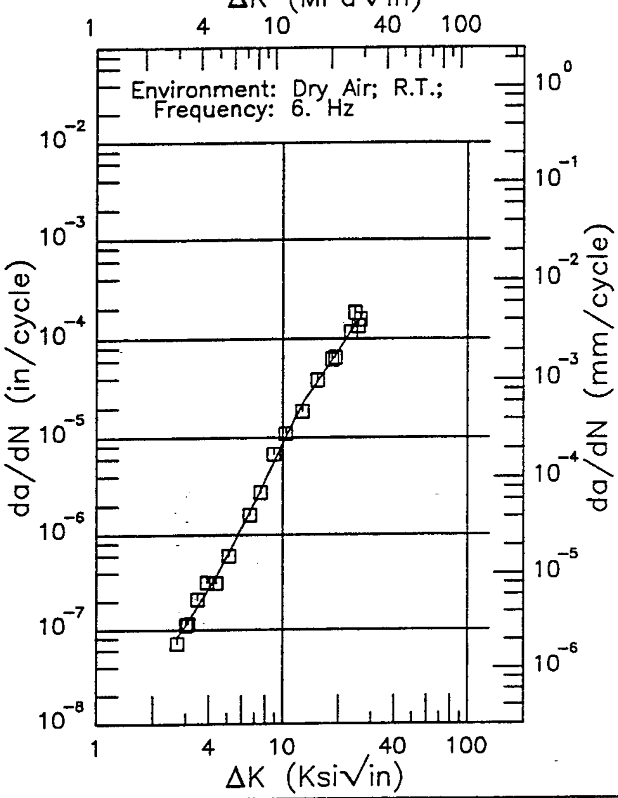
7475

EF

Condition/Ht: T7351
Form: 3 in. Plate
Specimen Type: CT
Orientation: L–T
Stress Ratio: 0.5

Yield Strength: 59.5 ksi
Ult. Strength: 69.1 ksi
Specimen Thk: 0.747 – 0.75 in.
Specimen Width: 4.998 – 5.005 in.
Ref: GD006

(1 of 2)



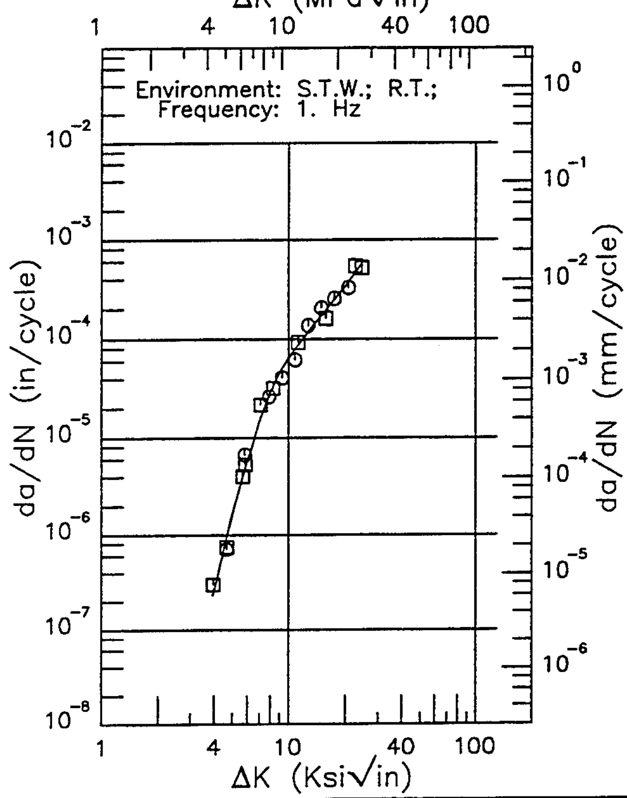
ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
2.69 (min)	0.0820
3.	0.111
3.5	0.177
4.	0.273
5.	0.595
6.	1.18
7.	2.13
8.	3.62
9.	5.80
10.	8.83
13.	23.1
16.	41.8
20.	75.5
25.	147.
26.23 (max)	155.

RMS % Error: 13.49

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

(2 of 2)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
3.94 (min)	0.233
4.	0.266
5.	1.63
6.	5.86
7.	14.7
8.	28.6
9.	46.3
10.	65.3
13.	124.
16.	200.
20.	339.
24.36 (max)	565.

RMS % Error: 19.69

Life Prediction Ratio Summary

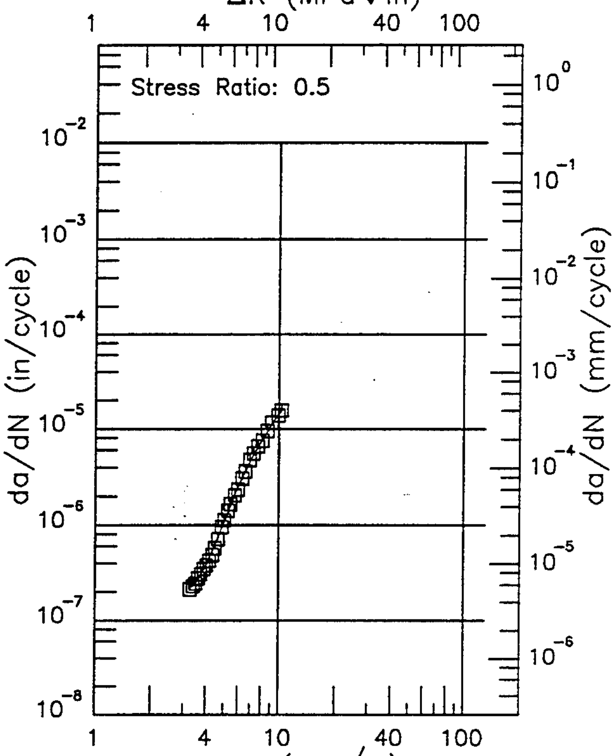
0. .5 .8 1.25 2.

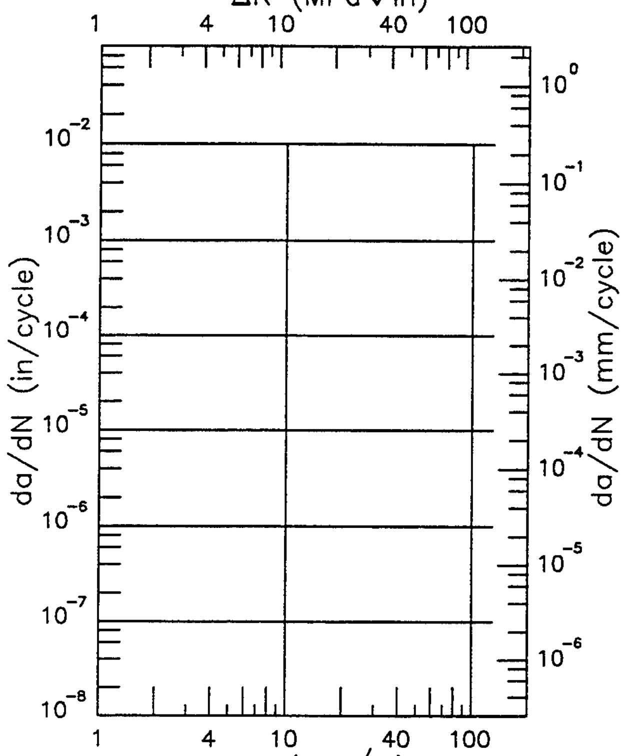
Figure 8.19.3.1.33

Condition/Ht: T7351
Form: Plate
Specimen Type: CT
Orientation: L–T
Frequency: 10 Hz
Environment: LAB AIR; RT

Yield Strength:
Ult. Strength:
Specimen Thk: 0.24 in.
Specimen Width: 2 in.
Ref: NC005

(1 of 1)



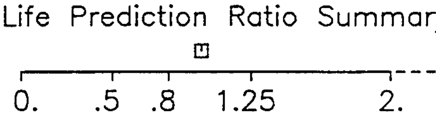


ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
3.27 (min)	0.217
3.5	0.243
4.	0.371
5.	1.05
6.	2.54
7.	4.74
8.	7.38
9.	10.9
10.	14.5
10.26 (max)	15.1

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error
3.88

Life Prediction Ratio Summary



RMS % Error

Life Prediction Ratio Summary

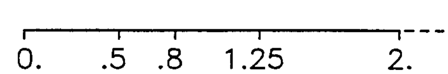


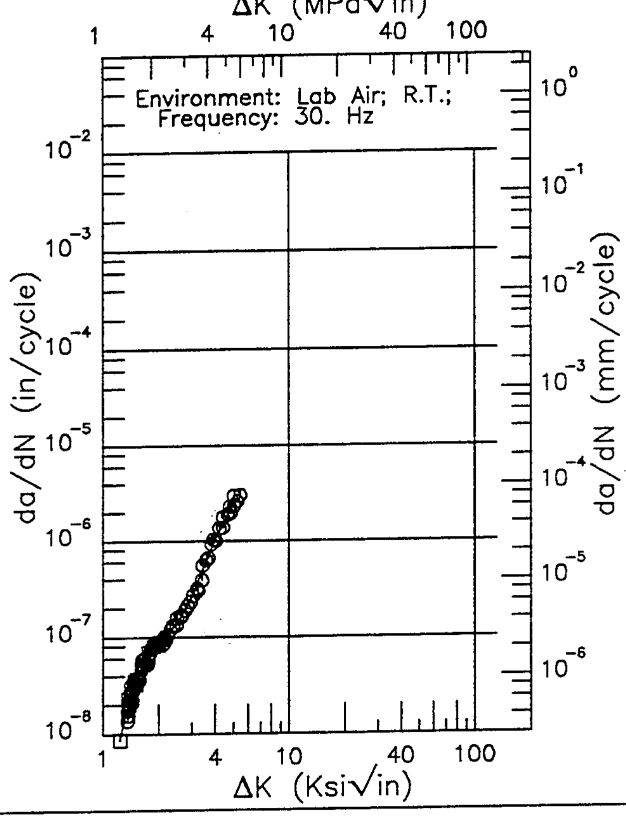
Figure 8.19.3.1.34

EF ⊣ 7475 ⊢

Condition/Ht: T7351
Form: 1.75 in. Plate
Specimen Type: CT
Orientation: L–T
Stress Ratio: 0.8

Yield Strength: 63.2 – 68.8 ksi
Ult. Strength: 73.7 ksi
Specimen Thk: 0.25 in.
Specimen Width: 1.994 – 2.001 in.
Ref: DA005;DA004

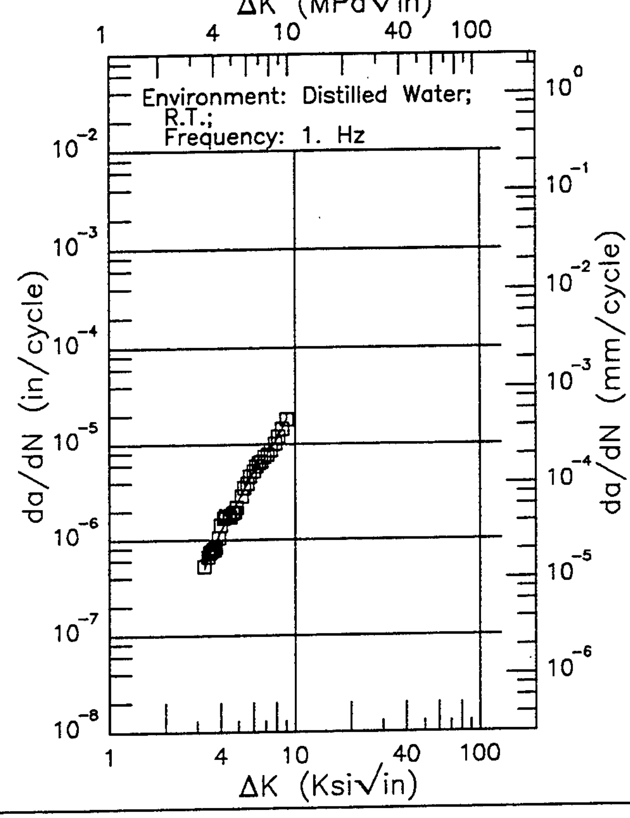
(1 of 2)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
1.23 (min)	0.00875
1.3	0.0140
1.6	0.0473
2.	0.0872
2.5	0.138
3.	0.261
3.5	0.537
4.	1.03
5.	2.46
5.42 (max)	2.84

RMS % Error	Life Prediction Ratio Summary
11.89	0. .5 .8 1.25 2.

(2 of 2)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
3.25 (min)	0.485
3.5	0.732
4.	1.24
5.	2.64
6.	5.20
7.	7.53
8.	11.1
9.	18.0
9.03 (max)	18.2

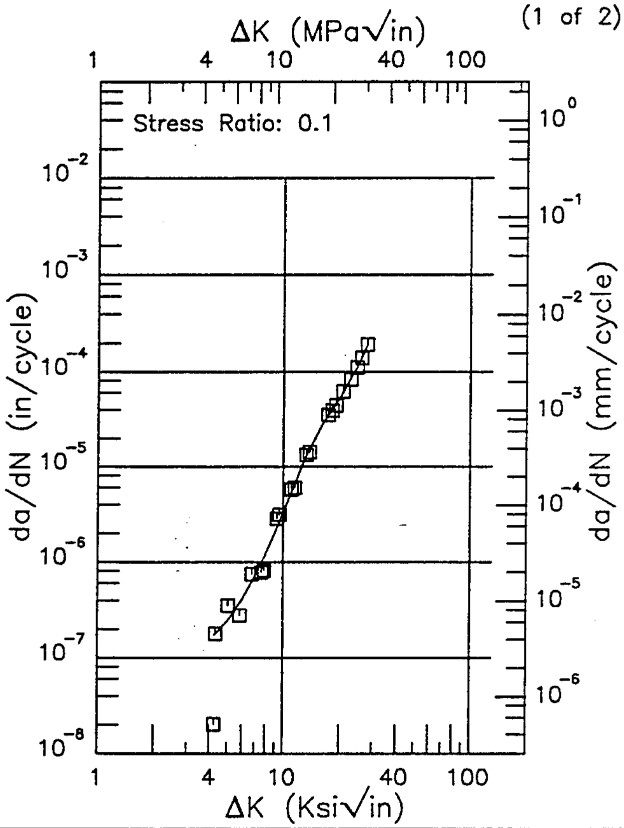
RMS % Error	Life Prediction Ratio Summary
7.57	0. .5 .8 1.25 2.

Figure 8.19.3.1.35

Condition/Ht: T7351
Form: 3 in. Plate
Specimen Type: CT
Orientation: T–L
Frequency: 6 Hz
Environment: DRY AIR; RT

Yield Strength: 61.3 ksi
Ult. Strength: 72.1 ksi
Specimen Thk: 0.751 – 0.755 in.
Specimen Width: 5.005 in.
Ref: GD006

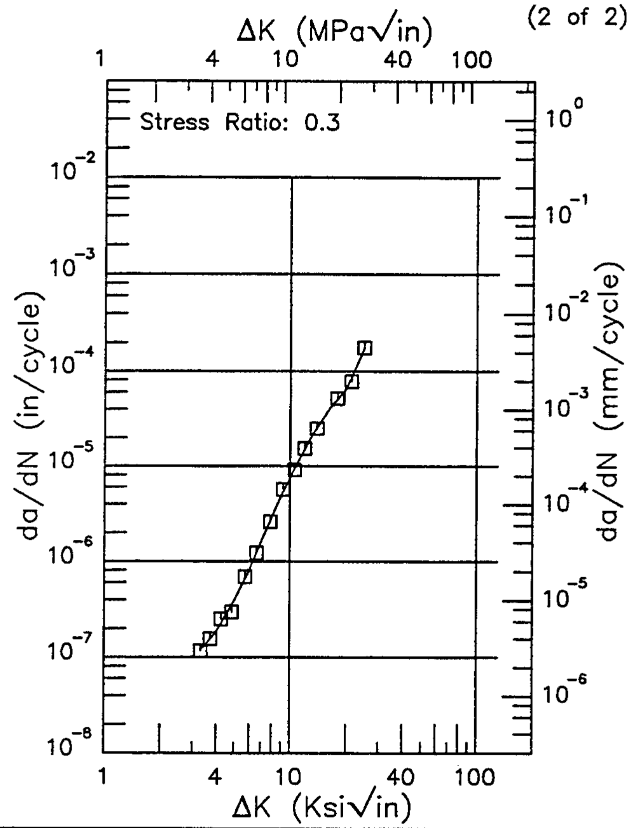
(1 of 2)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
4.24 (min)	0.175
5.	0.242
6.	0.405
7.	0.700
8.	1.20
9.	2.03
10.	3.33
13.	11.8
16.	27.7
20.	53.5
25.	120.
27.78 (max)	187.

RMS % Error	Life Prediction Ratio Summary
24.91	0. .5 .8 1.25 2.

(2 of 2)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
3.30 (min)	0.121
3.5	0.134
4.	0.184
5.	0.386
6.	0.808
7.	1.59
8.	2.90
9.	4.88
10.	7.64
13.	20.4
16.	38.3
20.	66.0
24.91 (max)	174.

RMS % Error	Life Prediction Ratio Summary
6.77	0. .5 .8 1.25 2.

Figure 8.19.3.1.36

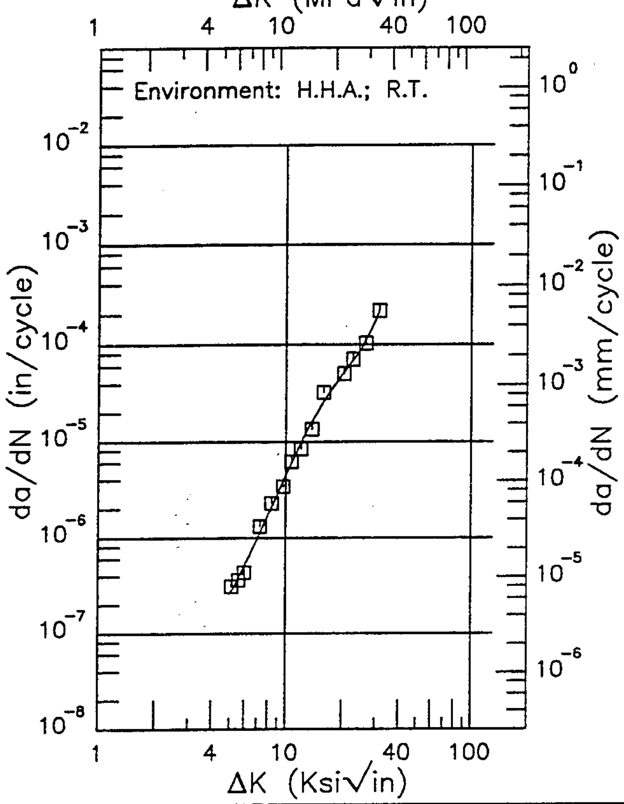
E

7475

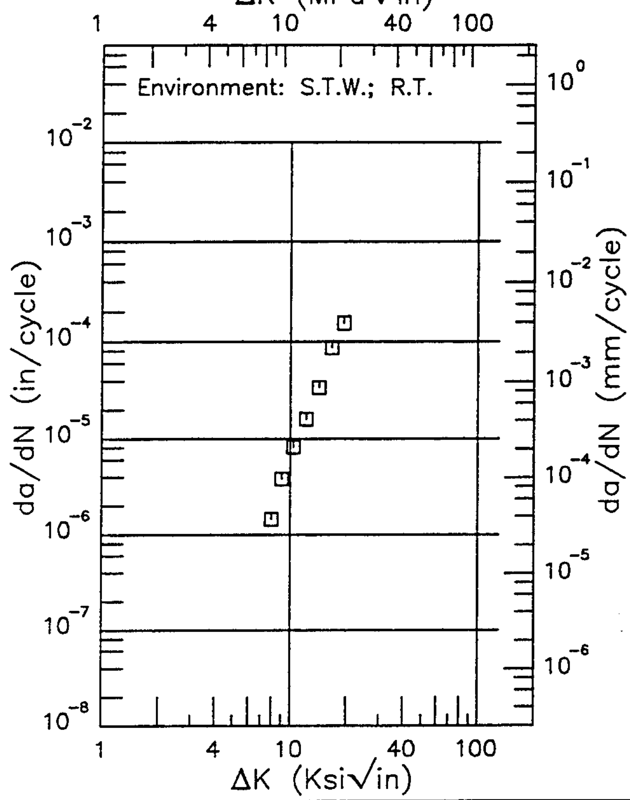
Condition/Ht: T7351
Form: 3 in. Plate
Specimen Type: CT
Orientation: T-L
Stress Ratio: 0.1
Frequency: 0.1 Hz

Yield Strength: 61.3 ksi
Ult. Strength: 72.1 ksi
Specimen Thk: 0.748 – 0.751 in.
Specimen Width: 4.998 – 5.002 in.
Ref: GD006

(1 of 2)



(2 of 2)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
5.10 (min)	0.274
6.	0.509
7.	0.963
8.	1.71
9.	2.86
10.	4.50
13.	13.2
16.	27.3
20.	50.4
25.	88.6
30.	174.
31.22 (max)	211.

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error 11.27

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

RMS % Error

Life Prediction Ratio Summary

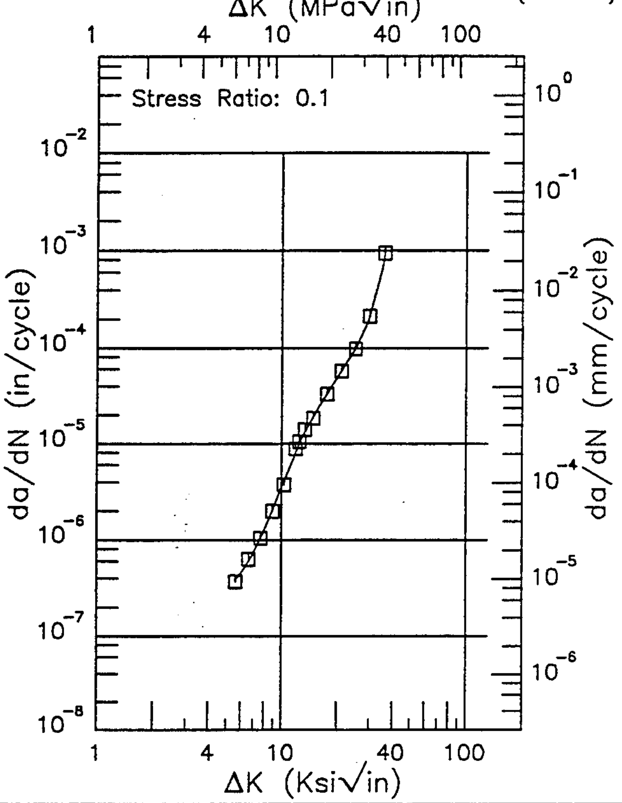
0. .5 .8 1.25 2.

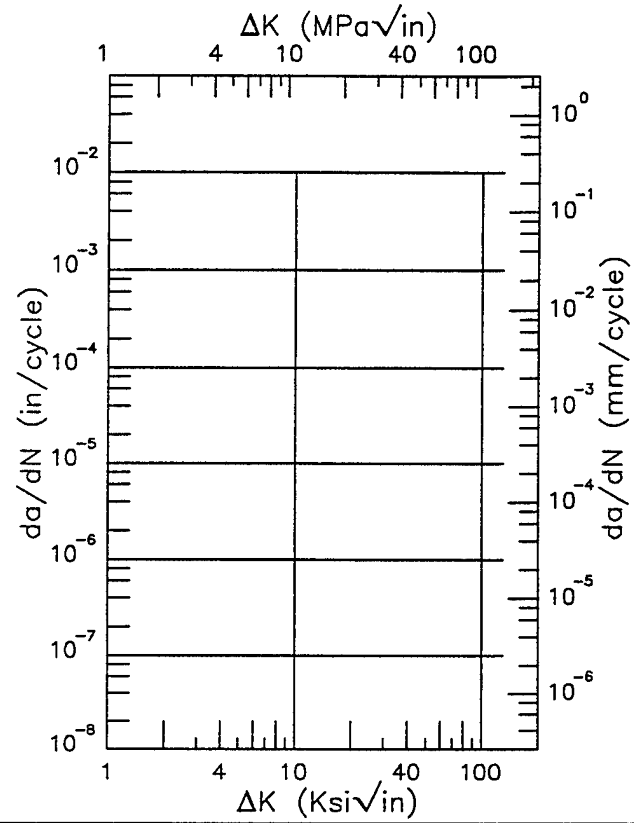
Figure 8.19.3.1.37

Condition/Ht: T7351
Form: 3 in. Plate
Specimen Type: CT
Orientation: T–L
Frequency: 1 Hz
Environment: H.H.A.; RT

Yield Strength: 61.3 ksi
Ult. Strength: 72.1 ksi
Specimen Thk: 0.75 in.
Specimen Width: 4.995 in.
Ref: GD006

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
5.59 (min)	0.383
6.	0.445
7.	0.721
8.	1.25
9.	2.15
10.	3.58
13.	11.9
16.	25.3
20.	49.2
25.	98.5
30.	215.
35.	665.
36.11 (max)	925.

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error	Life Prediction Ratio Summary
5.58	0. .5 .8 1.25 2.

RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

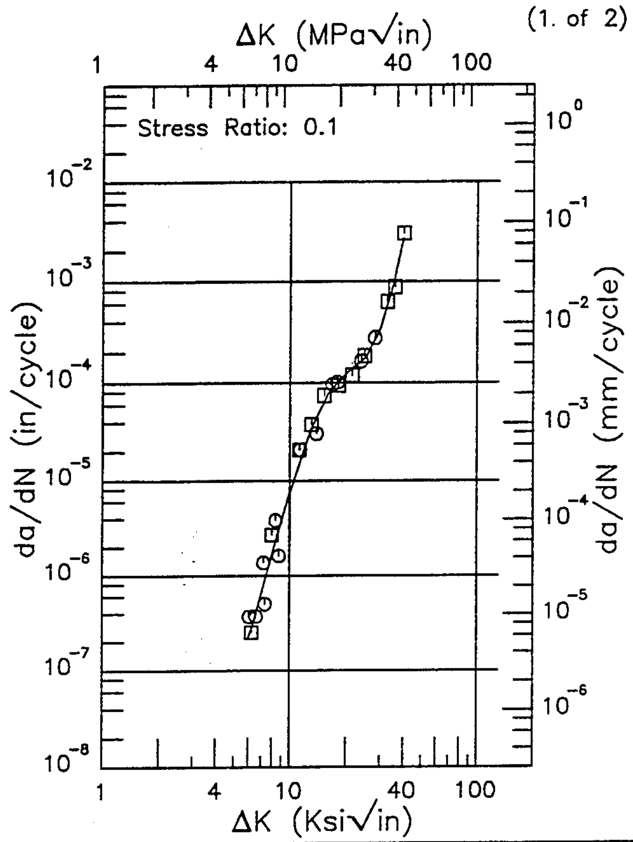
Figure 8.19.3.1.38

R

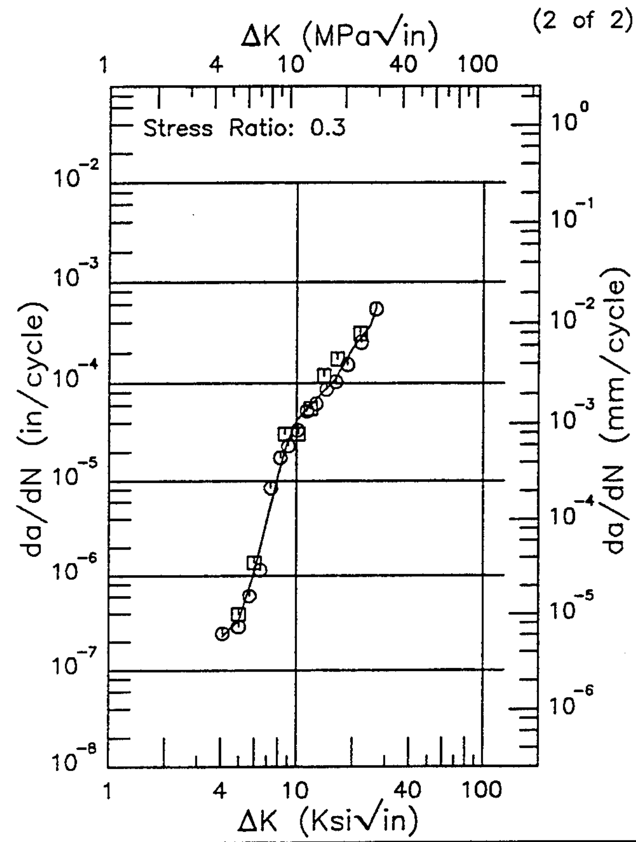
7475

Condition/Ht: T7351
Form: 3 in. Plate
Specimen Type: CT
Orientation: T–L
Frequency: 1 Hz
Environment: S.T.W.; RT

Yield Strength: 61.3 ksi
Ult. Strength: 72.1 ksi
Specimen Thk: 0.75 – 0.752 in.
Specimen Width: 4.997 – 5 in.
Ref: GD006



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
6.02 (min)	0.217
7.	0.643
8.	1.67
9.	3.80
10.	7.62
13.	34.0
16.	78.3
20.	124.
25.	177.
30.	343.
35.	916.
39.82 (max)	2659.



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
4.08 (min)	0.226
5.	0.343
6.	1.10
7.	3.86
8.	11.4
9.	25.5
10.	42.7
13.	72.2
16.	106.
20.	221.
25.	374.
26.55 (max)	536.

RMS % Error	Life Prediction Ratio Summary
35.44	0. .5 .8 1.25 2.

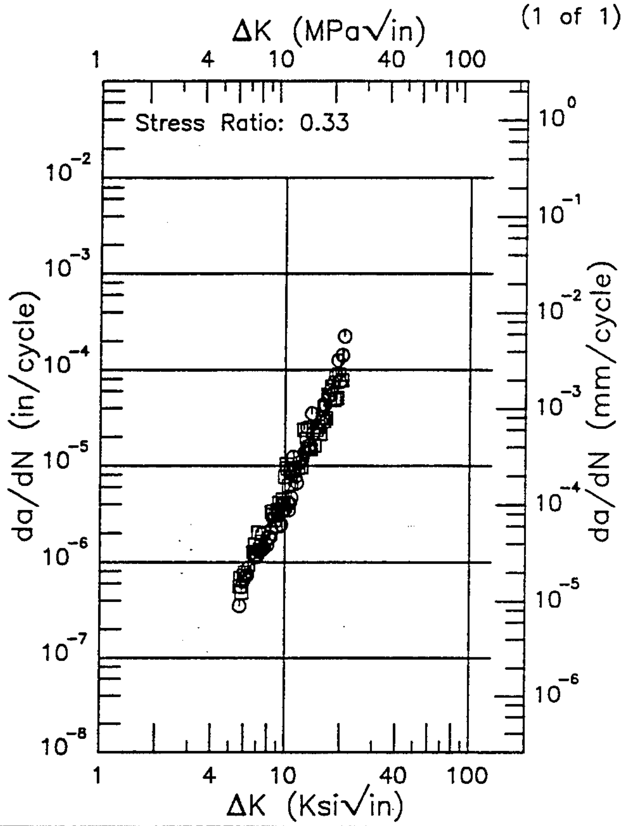
RMS % Error	Life Prediction Ratio Summary
26.64	0. .5 .8 1.25 2.

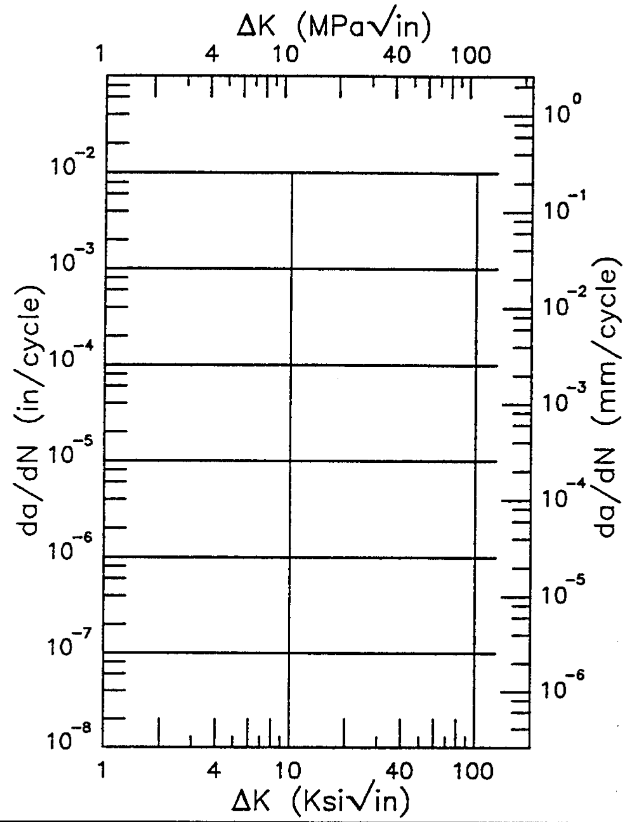
Figure 8.19.3.1.39

Condition/Ht: T7351
Form: 1 – 4 in. Plate
Specimen Type: CT
Orientation: T–L
Frequency: 2 – 20 Hz
Environment: L.H.A.; RT

Yield Strength: 54.2 – 59.4 ksi
Ult. Strength: 66 – 70 ksi
Specimen Thk: 1 in.
Specimen Width: 3.805 in.
Ref: AL001

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
5.68 (min)	0.558
6.	0.693
7.	1.21
8.	1.92
9.	3.00
10.	4.72
13.	15.7
16.	34.0
20.	115.
20.85 (max)	166.

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error	Life Prediction Ratio Summary
26.43	0. .5 .8 1.25 2.

RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

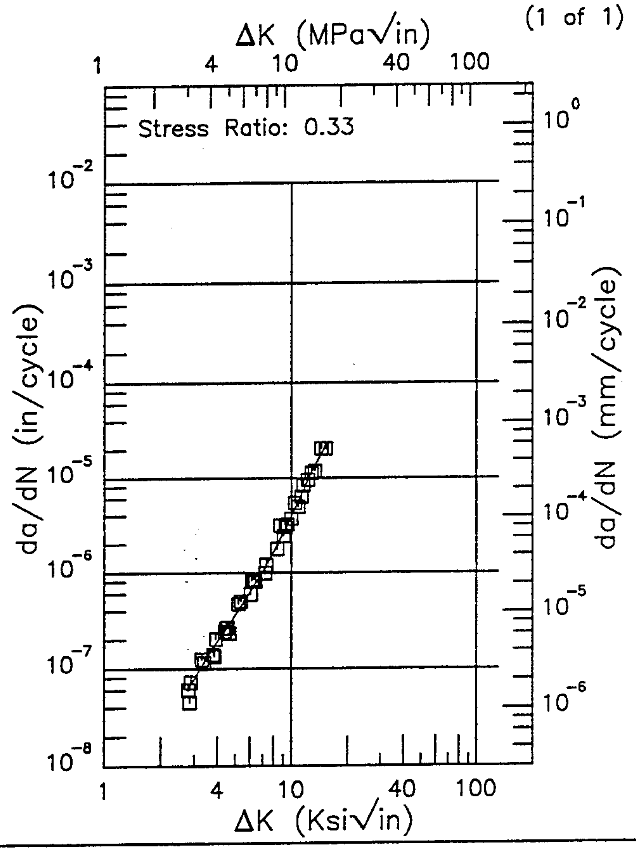
Figure 8.19.3.1.40

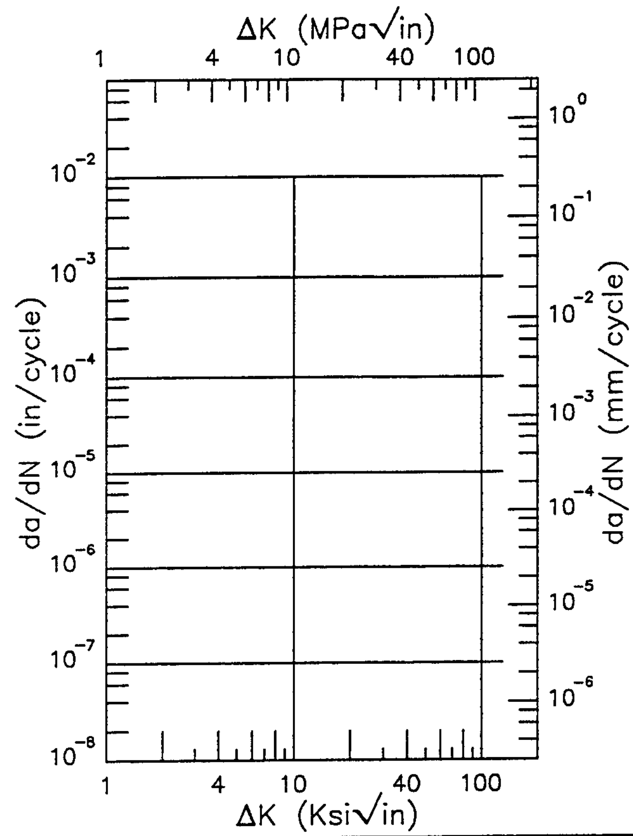
R 7475

Condition/Ht: T7351
Form: 4 in. Plate
Specimen Type: CT
Orientation: T–L
Frequency: 2 – 30 Hz
Environment: L.H.A.; RT

Yield Strength: 54.2 ksi
Ult. Strength: 66 ksi
Specimen Thk: 0.25 in.
Specimen Width: 3.805 in.
Ref: AL001

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
2.78 (min)	0.0607
3.	0.0785
3.5	0.128
4.	0.189
5.	0.361
6.	0.622
7.	1.02
8.	1.64
9.	2.57
10.	3.93
13.	12.1
15.21 (max)	22.4

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error	Life Prediction Ratio Summary
13.33	0. .5 .8 1.25 2.

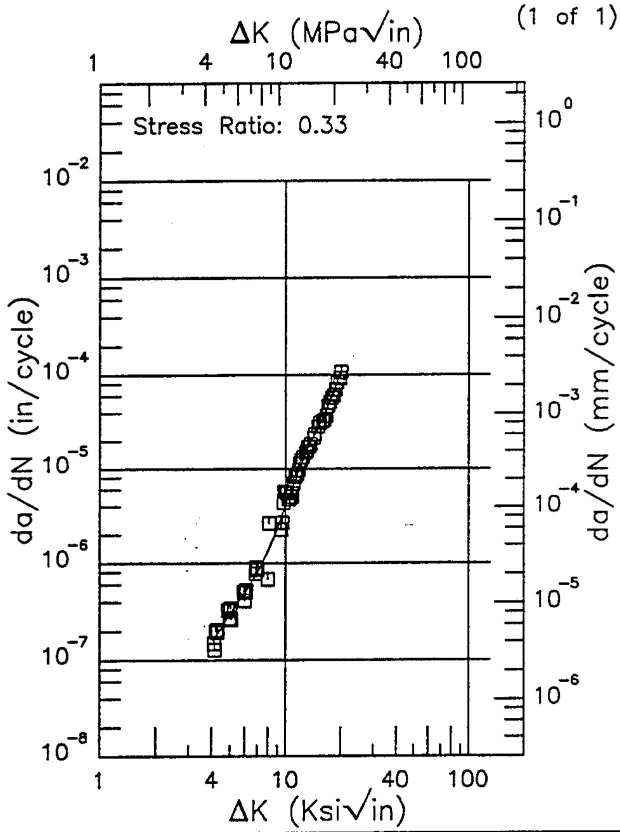
RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

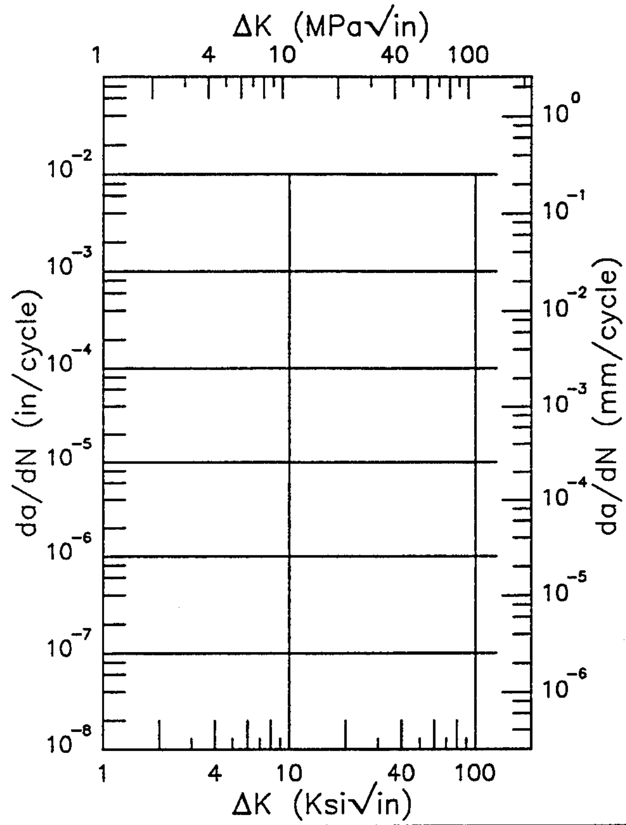
Figure 8.19.3.1.41

Condition/Ht: T7351
Form: 3.5 in. Plate
Specimen Type: CT
Orientation: T–L
Frequency: 2 – 30 Hz
Environment: L.H.A.; RT

Yield Strength:
Ult. Strength:
Specimen Thk: 0.999 in.
Specimen Width: 3.805 in.
Ref: AL009

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
4.08 (min)	0.160
5.	0.302
6.	0.495
7.	0.790
8.	1.32
9.	2.32
10.	4.08
13.	15.4
16.	35.7
20.00 (max)	106.

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error 19.01

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

RMS % Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

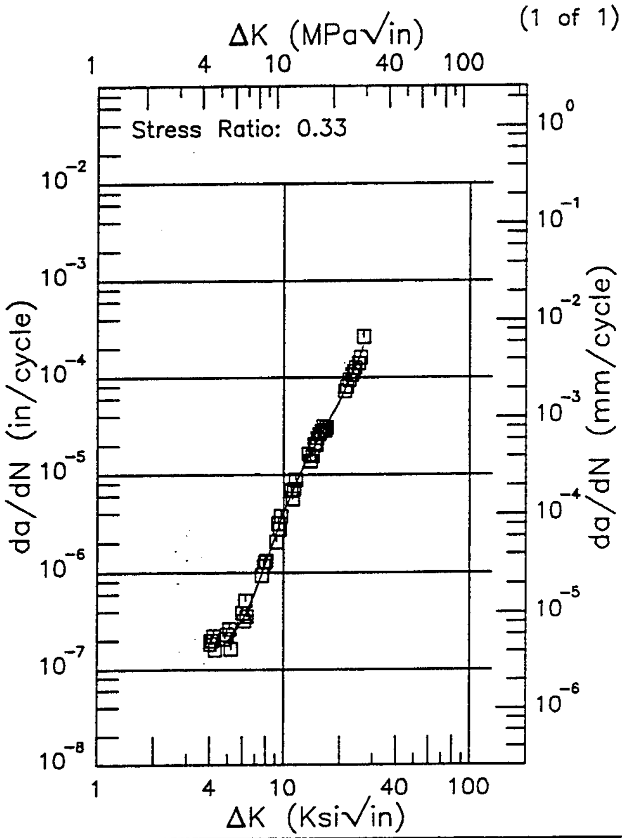
Figure 8.19.3.1.42

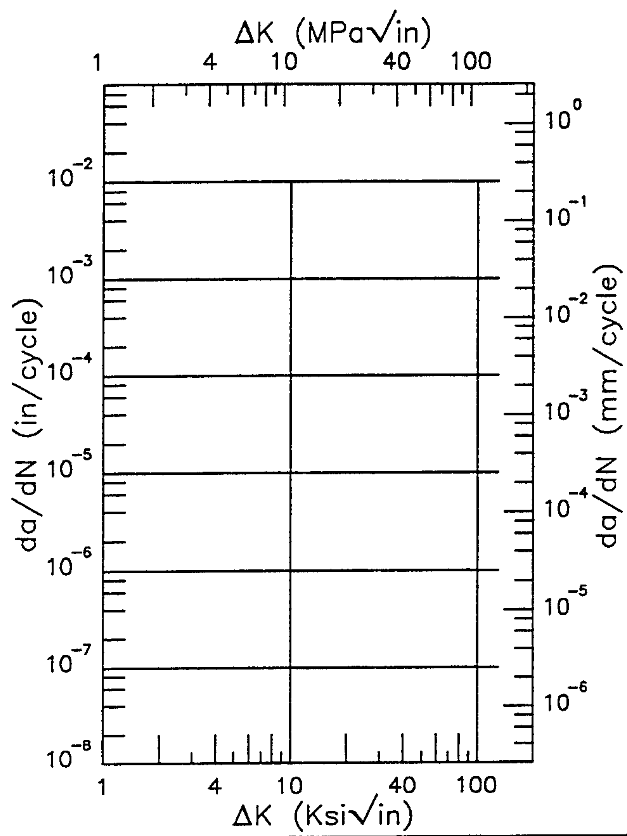
R 7475

Condition/Ht: T7351
Form: 0.75 in. Plate
Specimen Type: CT
Orientation: T-L
Frequency: 2 - 30 Hz
Environment: L.H.A.; RT

Yield Strength:
Ult. Strength:
Specimen Thk: 0.75 in.
Specimen Width: 3.08 in.
Ref: AL009

(1 of 1)



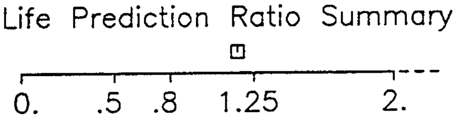


ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
4.01 (min)	0.193
5.	0.195
6.	0.323
7.	0.629
8.	1.24
9.	2.34
10.	4.08
13.	13.3
16.	27.1
20.	57.6
25.	150.
26.73 (max)	213.

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error
12.68

Life Prediction Ratio Summary



RMS % Error

Life Prediction Ratio Summary

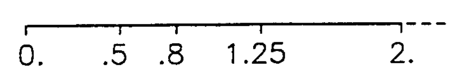
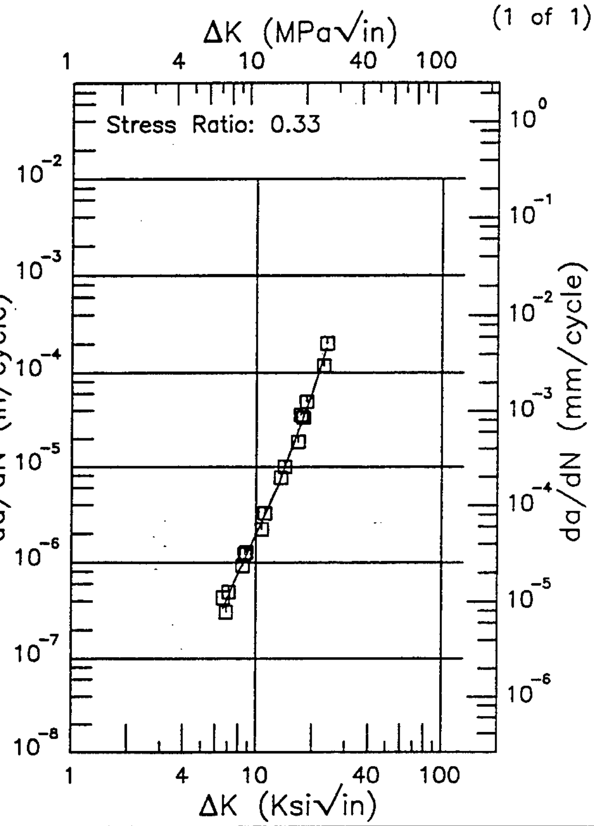


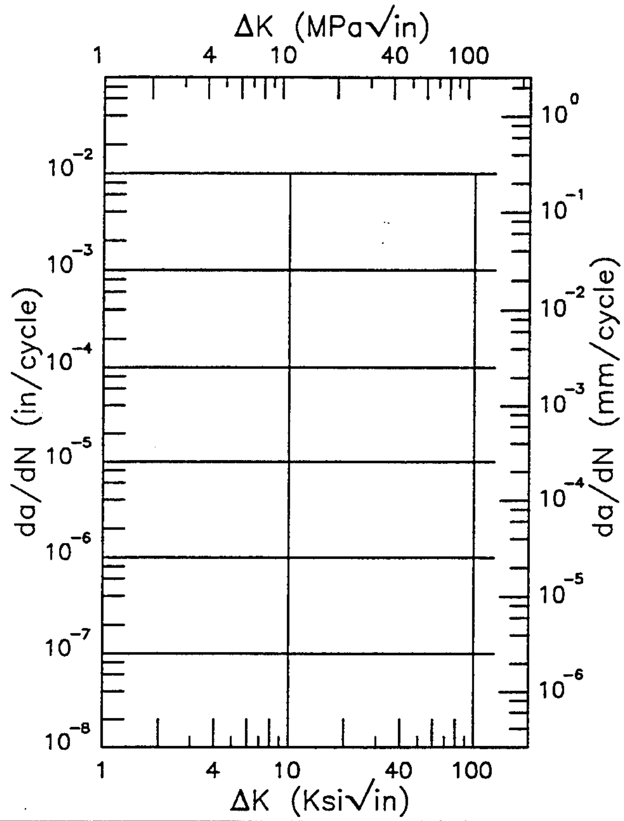
Figure 8.19.3.1.43

Condition/Ht: T7351
Form: 0.75 in. Plate
Specimen Type: CT
Orientation: T–L
Frequency: 30 Hz
Environment: L.H.A.; RT

Yield Strength:
Ult. Strength:
Specimen Thk: 0.25 in.
Specimen Width: 2.55 in.
Ref: AL009

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
6.63 (min)	0.335
7.	0.433
8.	0.782
9.	1.28
10.	1.96
13.	6.04
16.	18.7
20.	62.0
23.76 (max)	181.

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error	Life Prediction Ratio Summary
15.33	0. .5 .8 1.25 2.

RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

Figure 8.19.3.1.44

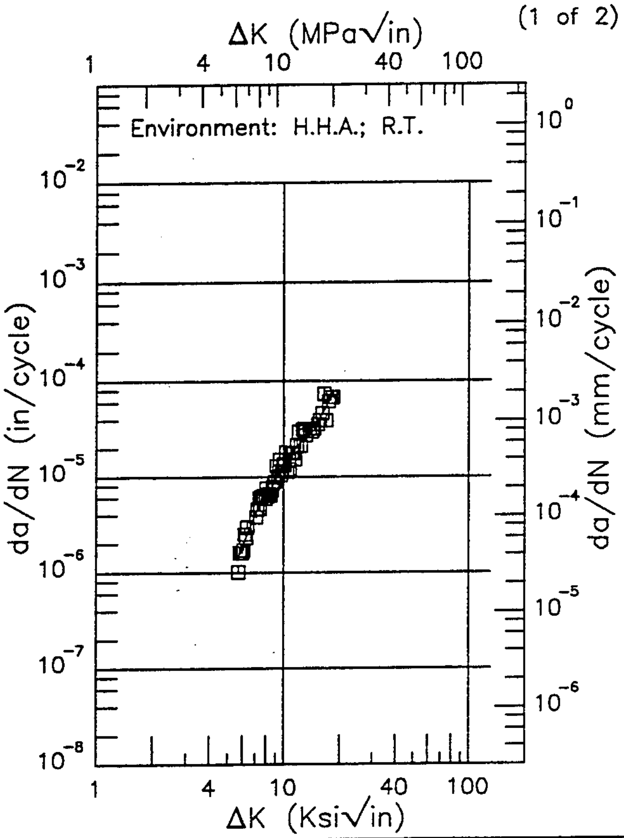
E

7475

Condition/Ht: T7351
Form: 1 – 4 in. Plate
Specimen Type: CT
Orientation: T–L
Stress Ratio: 0.33
Frequency: 2 – 20 Hz

Yield Strength: 54.2 – 59.4 ksi
Ult. Strength: 66 – 70 ksi
Specimen Thk: 1 in.
Specimen Width: 3.805 in.
Ref: AL001;AL009

(1 of 2)



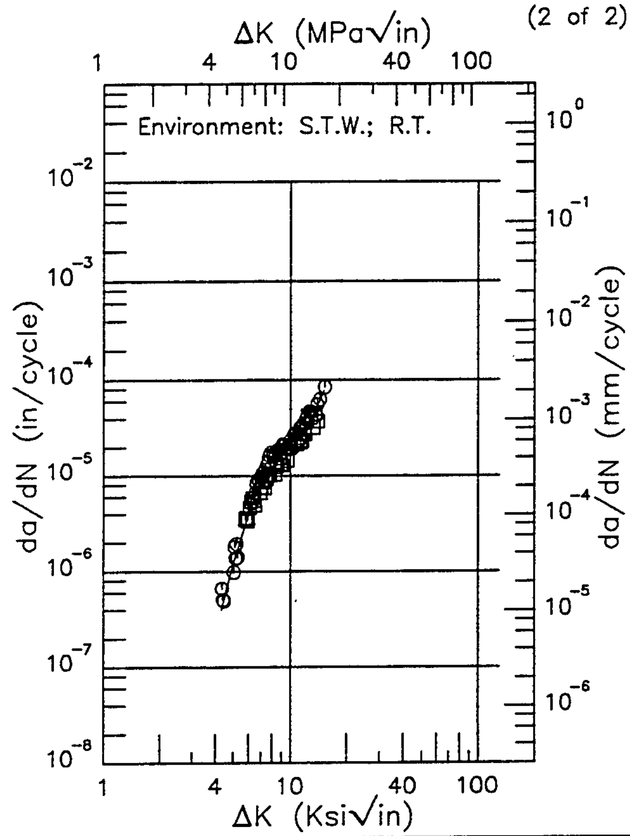
ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
5.70 (min)	1.37
6.	1.89
7.	4.04
8.	6.54
9.	9.29
10.	12.6
13.	27.5
16.	44.0
18.33 (max)	74.0

RMS % Error: 16.82

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

(2 of 2)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
4.33 (min)	0.400
5.	1.18
6.	3.93
7.	8.78
8.	14.3
9.	18.6
10.	21.9
13.	40.7
15.20 (max)	78.2

RMS % Error: 18.23

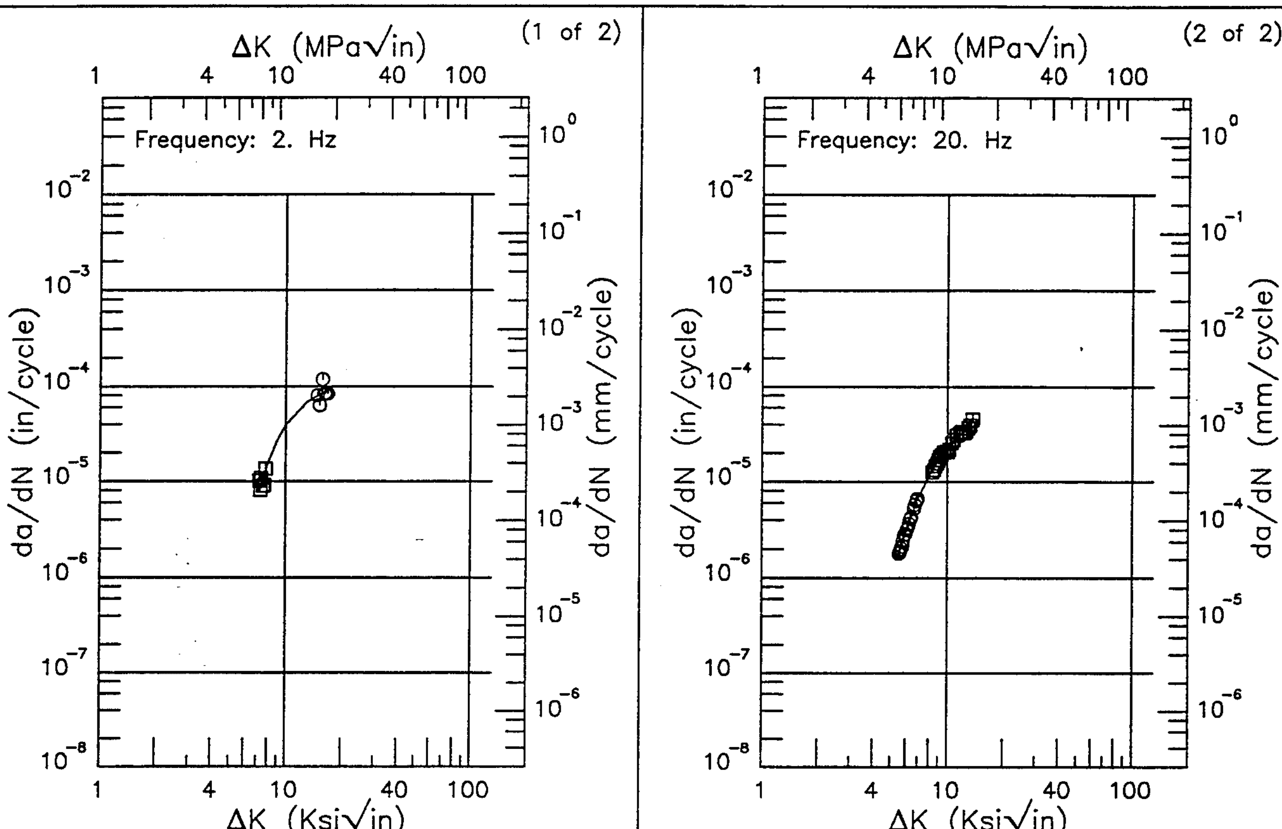
Life Prediction Ratio Summary

0. .5 .8 1.25 2.

Figure 8.19.3.1.45

Condition/Ht: T7351
Form: 0.75 in. Plate
Specimen Type: CT
Orientation: T–L
Stress Ratio: 0.33
Environment: S.T.W.; RT

Yield Strength:
Ult. Strength:
Specimen Thk: 0.75 in.
Specimen Width: 3.08 in.
Ref: AL009



ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)
7.18 (min)	7.92
8.	15.5
9.	27.0
10.	39.2
13.	68.2
16.	87.2
16.67 (max)	91.2

ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)
5.51 (min)	1.69
6.	2.97
7.	6.75
8.	11.6
9.	16.8
10.	22.1
13.	38.1
13.68 (max)	42.1

RMS % Error	Life Prediction Ratio Summary
18.79	0. .5 .8 1.25 2.

RMS % Error	Life Prediction Ratio Summary
4.77	0. .5 .8 1.25 2.

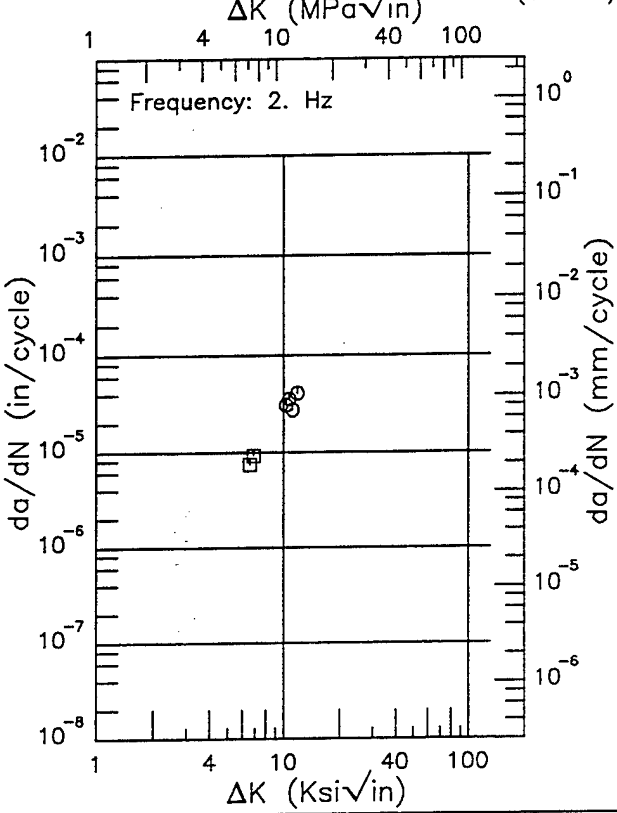
Figure 8.19.3.1.46

F | 7475 |

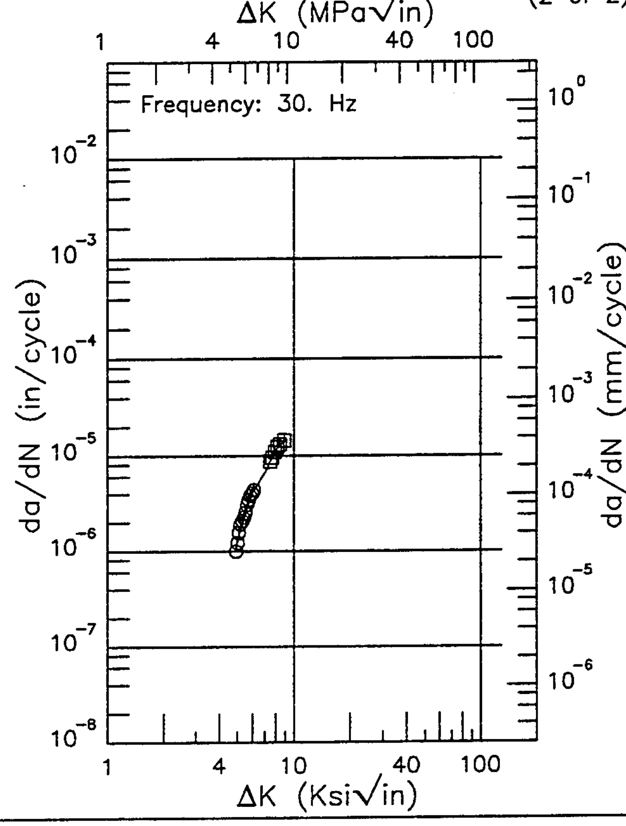
Condition/Ht: T7351
Form: 3.5 in. Plate
Specimen Type: CT
Orientation: T–L
Stress Ratio: 0.33
Environment: S.T.W.; RT

Yield Strength:
Ult. Strength:
Specimen Thk: 0.25 in.
Specimen Width: 2.55 in.
Ref: AL009

(1 of 2)



(2 of 2)



ΔK (Ksi$\sqrt{in}$)	da/dN (10^{-6}in/cycle)

ΔK (Ksi$\sqrt{in}$)	da/dN (10^{-6}in/cycle)
4.90 (min)	1.03
5.	1.27
6.	4.09
7.	6.65
8.	11.5
8.83 (max)	14.3

RMS % Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

RMS % Error
8.57

Life Prediction Ratio Summary

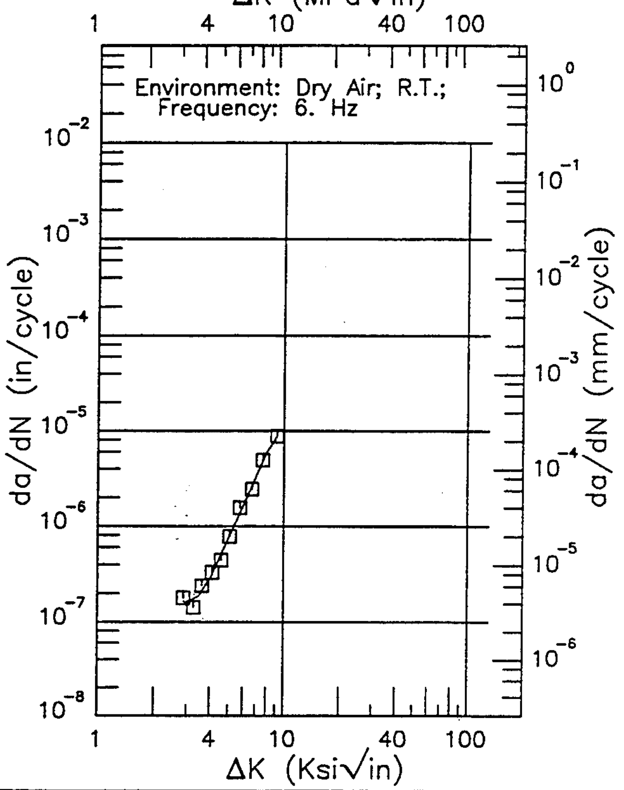
0. .5 .8 1.25 2.

Figure 8.19.3.1.47

Condition/Ht: T7351
Form: 3 in. Plate
Specimen Type: CT
Orientation: T–L
Stress Ratio: 0.5

Yield Strength: 61.3 ksi
Ult. Strength: 72.1 ksi
Specimen Thk: 0.75 in.
Specimen Width: 4.998 – 5.003 in.
Ref: GD006

(1 of 2)

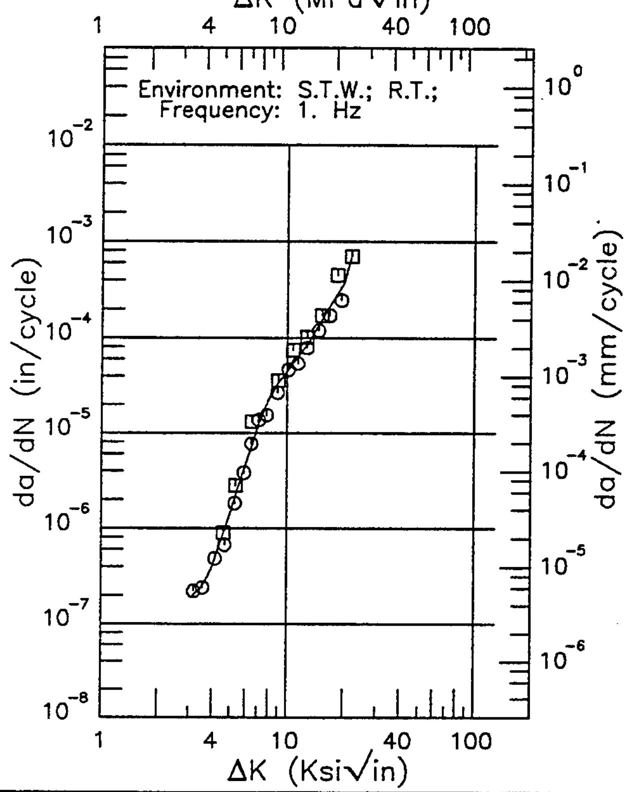


ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
2.88 (min)	0.165
3.	0.159
3.5	0.186
4.	0.285
5.	0.748
6.	1.65
7.	3.26
8.	5.98
9.	8.59
9.11 (max)	8.76

RMS % Error: 10.92

Life Prediction Ratio Summary: 0. .5 .8 1.25 2.

(2 of 2)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
3.17 (min)	0.199
3.5	0.241
4.	0.399
5.	1.41
6.	4.62
7.	11.7
8.	22.4
9.	33.8
10.	44.9
13.	88.1
16.	176.
20.	371.
21.86 (max)	671.

RMS % Error: 25.85

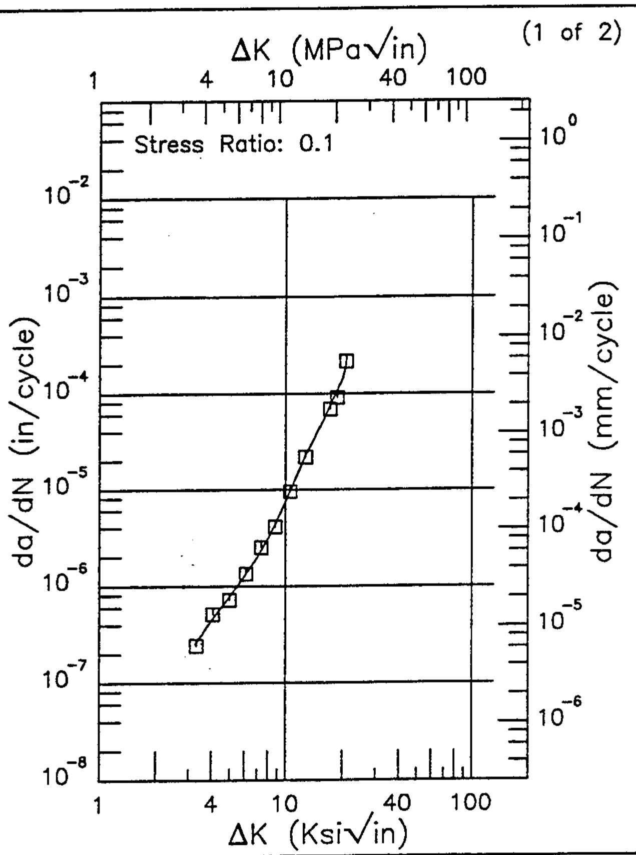
Life Prediction Ratio Summary: 0. .5 .8 1.25 2.

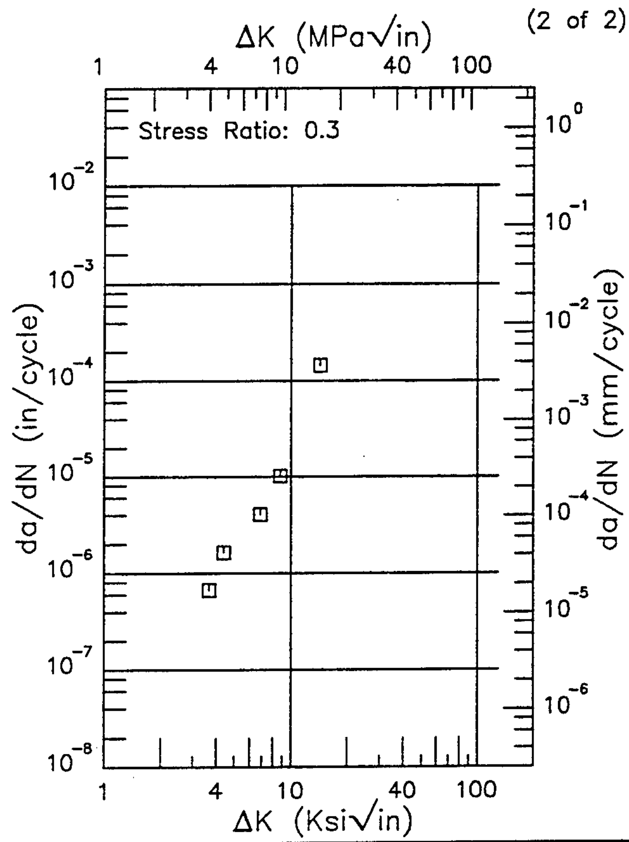
Figure 8.19.3.1.48

R 7475

Condition/Ht: T7351
Form: 3 in. Plate
Specimen Type: CT
Orientation: S-L
Frequency: 6 Hz
Environment: DRY AIR; RT

Yield Strength: 57.4 ksi
Ult. Strength: 70.6 ksi
Specimen Thk: 0.502 - 0.503 in.
Specimen Width: 2.553 - 2.554 in.
Ref: GD006





ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)
3.31 (min)	0.255
3.5	0.304
4.	0.445
5.	0.789
6.	1.26
7.	1.97
8.	3.08
9.	4.83
10.	7.48
13.	24.2
16.	55.8
20.	142.
20.84 (max)	212.

ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)

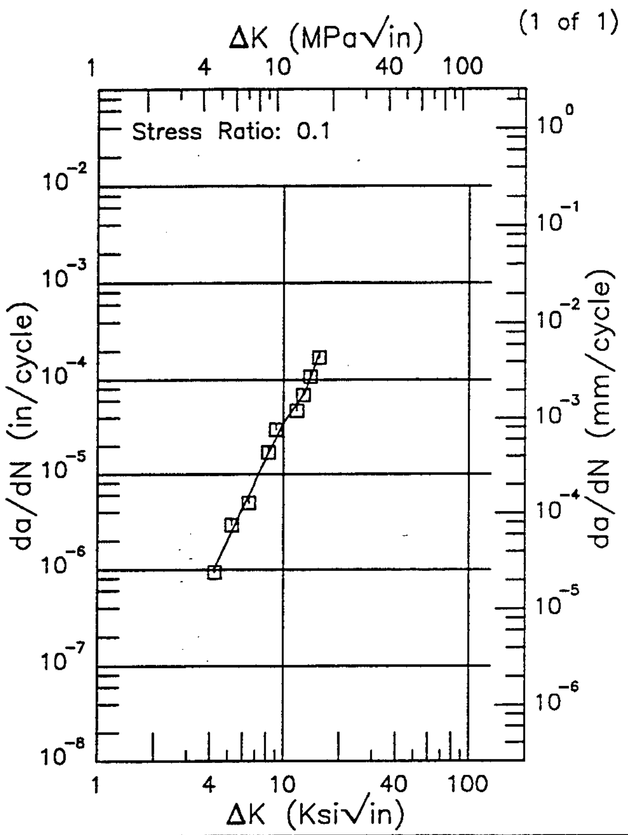
RMS % Error	Life Prediction Ratio Summary
7.26	0. .5 .8 1.25 2.

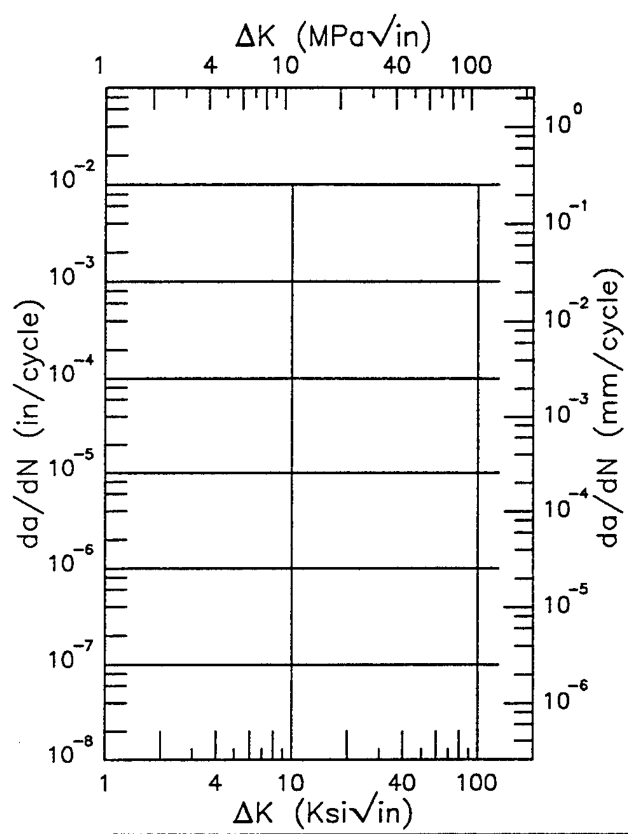
RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

Figure 8.19.3.1.49

Condition/Ht: T7351
Form: 3 in. Plate
Specimen Type: CT
Orientation: S-L
Frequency: 1 Hz
Environment: S.T.W.; RT

Yield Strength: 57.4 ksi
Ult. Strength: 70.6 ksi
Specimen Thk: 0.518 in.
Specimen Width: 2.555 in.
Ref: GD006





ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)
4.23 (min)	1.02
5.	2.07
6.	4.44
7.	8.40
8.	14.6
9.	23.7
10.	35.3
13.	72.0
15.42 (max)	181.

ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)

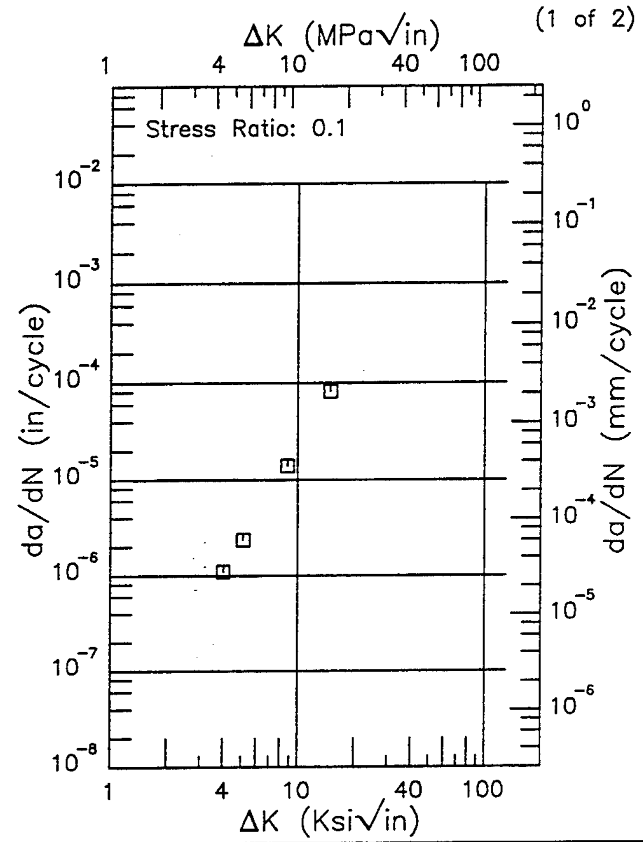
RMS % Error	Life Prediction Ratio Summary
13.09	0. .5 .8 1.25 2.

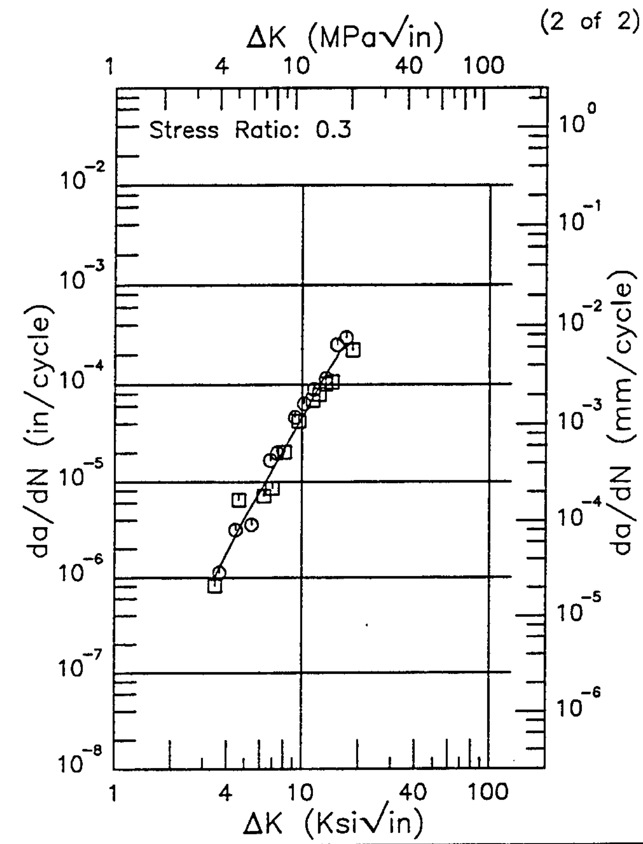
RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

Figure 8.19.3.1.50

R 7475

Condition/Ht: T7351	
Form: 3 in. Plate	Yield Strength: 57.4 ksi
Specimen Type: CT	Ult. Strength: 70.6 ksi
Orientation: S–L	Specimen Thk: 0.502 in.
Frequency: 1 Hz	Specimen Width: 2.554 in.
Environment: S.T.W.; RT	Ref: GD006





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
3.44 (min)	0.990
3.5	1.06
4.	1.83
5.	4.21
6.	7.96
7.	13.4
8.	21.1
9.	31.7
10.	45.7
13.	115.
16.	219.
18.55 (max)	265.

RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

RMS % Error	Life Prediction Ratio Summary
32.11	0. .5 .8 1.25 2.

Figure 8.19.3.1.51

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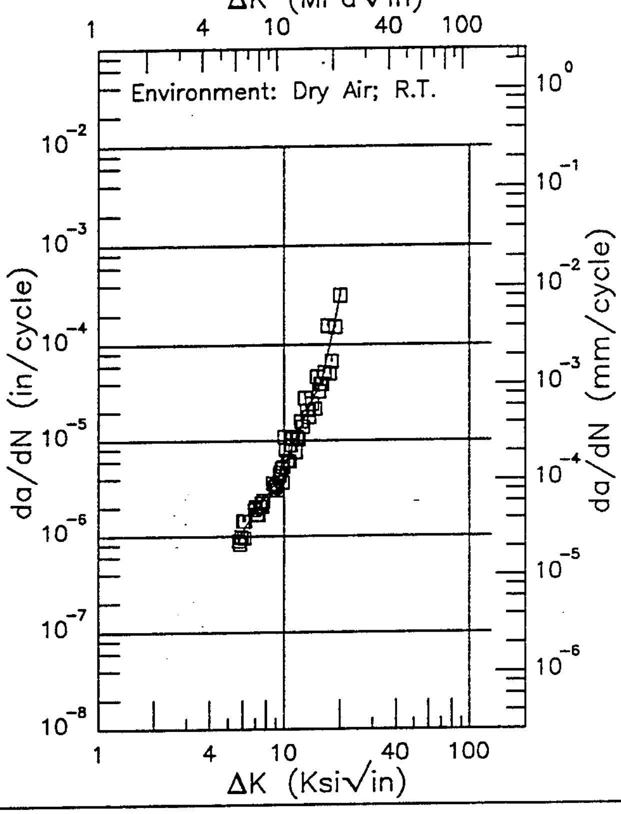
E

7475

Condition/Ht: T7351
Form: 4 in. Plate
Specimen Type: CT
Orientation: S-L
Stress Ratio: 0.33
Frequency: 2 – 20 Hz

Yield Strength: 52.5 ksi
Ult. Strength: 65 ksi
Specimen Thk: 1 in.
Specimen Width: 3.805 in.
Ref: AL001

(1 of 3)



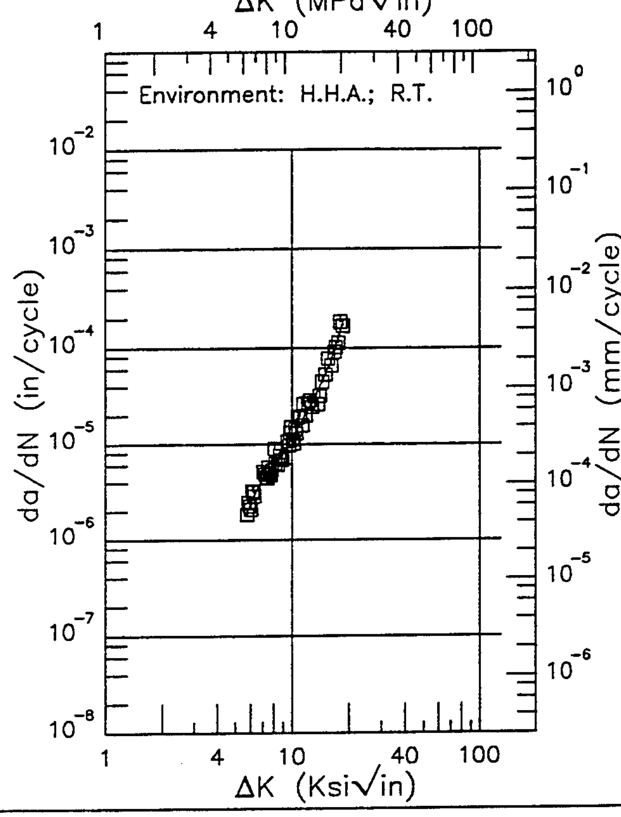
ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
5.68 (min)	0.911
6.	1.14
7.	1.84
8.	2.61
9.	3.70
10.	5.52
13.	18.0
16.	44.8
19.93 (max)	312.

RMS % Error 27.07

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

(2 of 3)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
5.74 (min)	1.85
6.	2.45
7.	4.52
8.	6.07
9.	8.05
10.	11.6
13.	28.8
16.	69.4
18.53 (max)	175.

RMS % Error 16.43

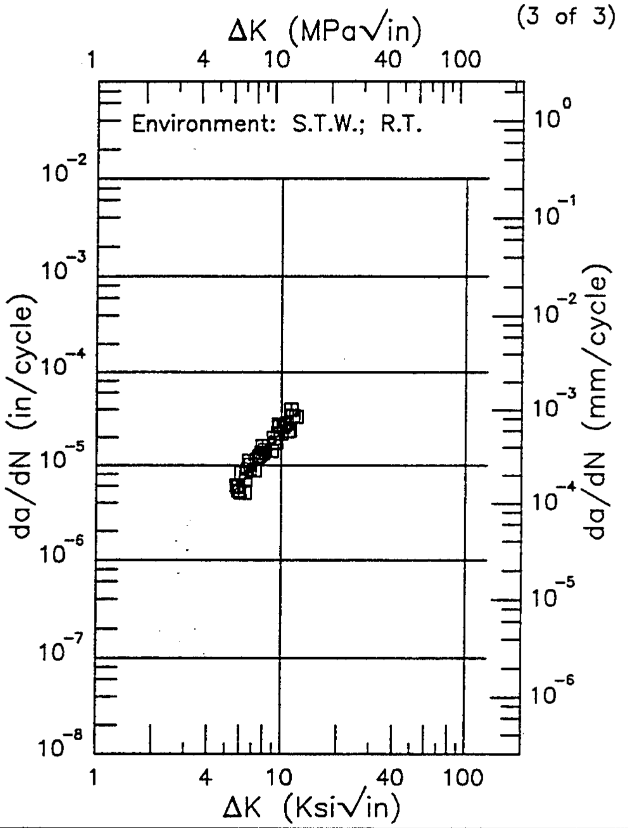
Life Prediction Ratio Summary

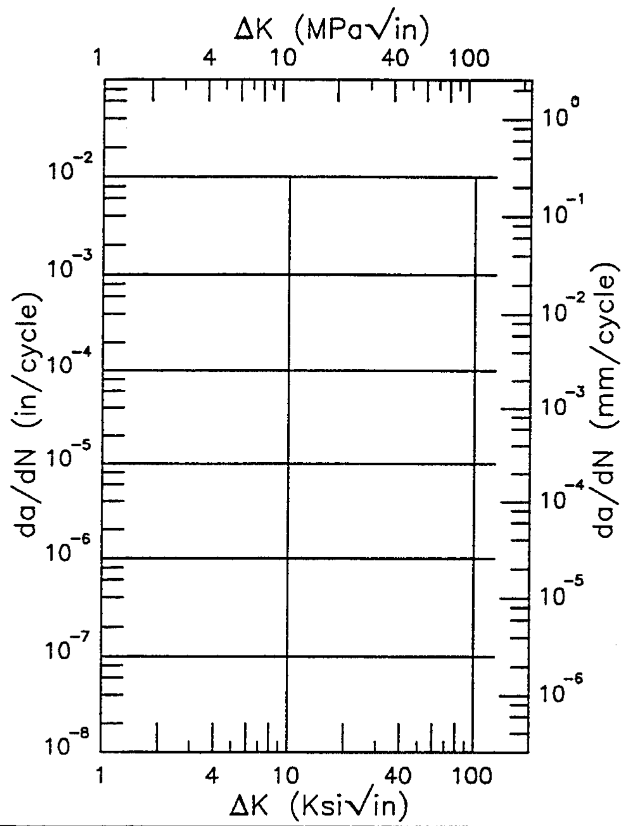
0. .5 .8 1.25 2.

Figure 8.19.3.1.52

Condition/Ht: T7351	
Form: 4 in. Plate	Yield Strength: 52.5 ksi
Specimen Type: CT	Ult. Strength: 65 ksi
Orientation: S-L	Specimen Thk: 1 in.
Stress Ratio: 0.33	Specimen Width: 3.805 in.
Frequency: 2 – 20 Hz	Ref: AL001

(3 of 3)





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
5.70 (min)	5.48
6.	6.36
7.	9.63
8.	13.4
9.	17.9
10.	23.1
11.87 (max)	36.3

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error	Life Prediction Ratio Summary
14.60	0. .5 .8 1.25 2.

RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

Figure 8.19.3.1.52 (Concluded)

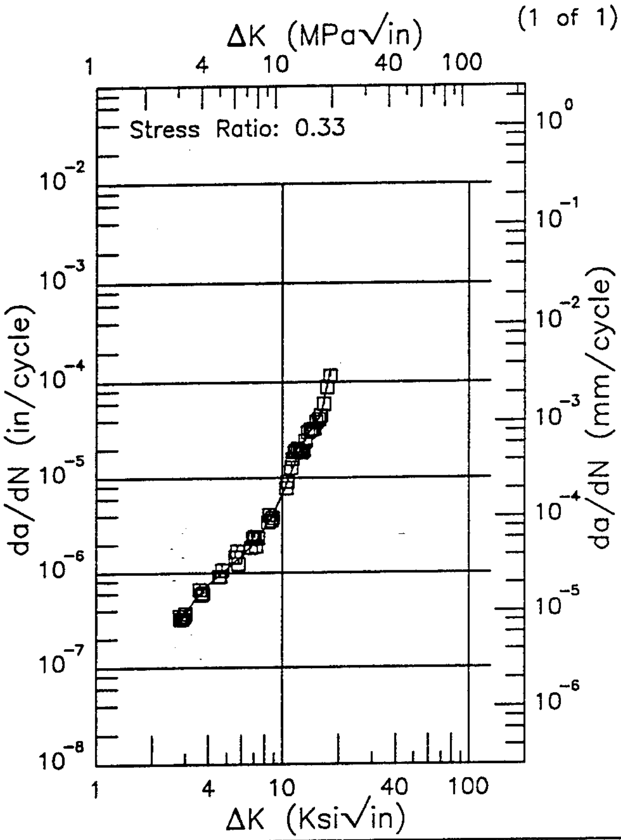
7475

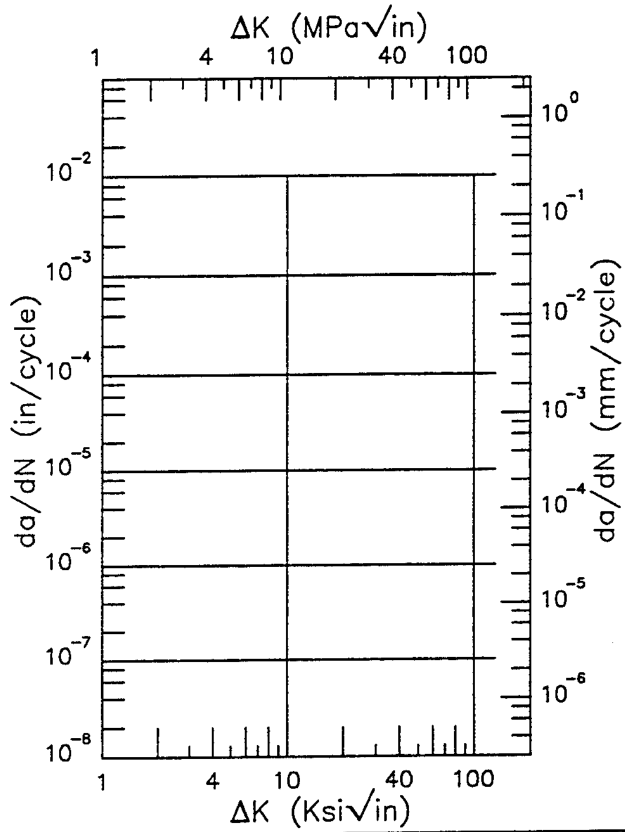
R

Condition/Ht: T7351
Form: 3.5 in. Plate
Specimen Type: CT
Orientation: S–L
Frequency: 2 – 30 Hz
Environment: L.H.A.; RT

Yield Strength:
Ult. Strength:
Specimen Thk: 1 in.
Specimen Width: 3.546 in.
Ref: AL009

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
2.80 (min)	0.290
3.	0.368
3.5	0.565
4.	0.751
5.	1.10
6.	1.49
7.	2.05
8.	2.92
9.	4.36
10.	6.79
13.	24.9
16.	45.3
17.86 (max)	129.

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error	Life Prediction Ratio Summary
11.84	0. .5 .8 1.25 2.

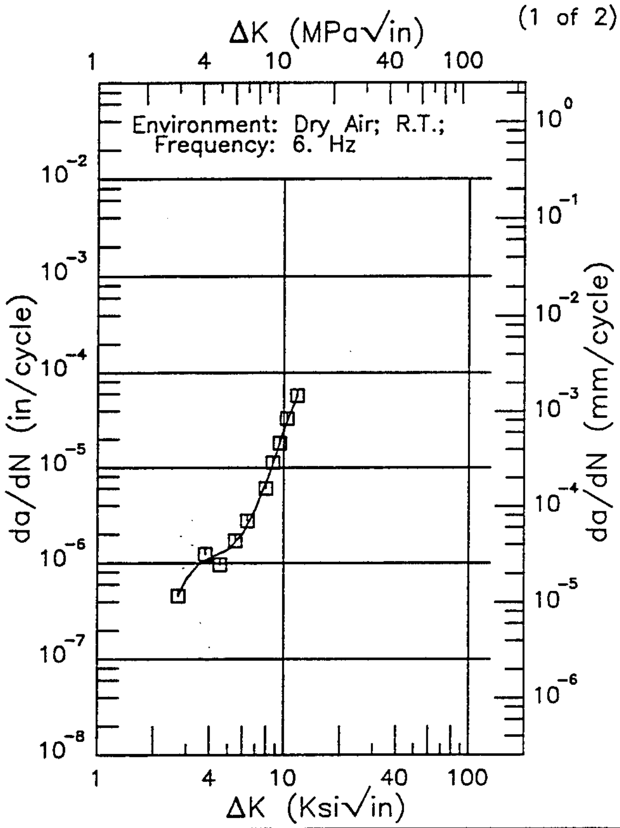
RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

Figure 8.19.3.1.53

Condition/Ht: T7351
Form: 3 in. Plate
Specimen Type: CT
Orientation: S–L
Stress Ratio: 0.5

Yield Strength: 57.4 ksi
Ult. Strength: 70.6 ksi
Specimen Thk: 0.502 – 0.503 in.
Specimen Width: 2.552 – 2.555 in.
Ref: GD006

(1 of 2)

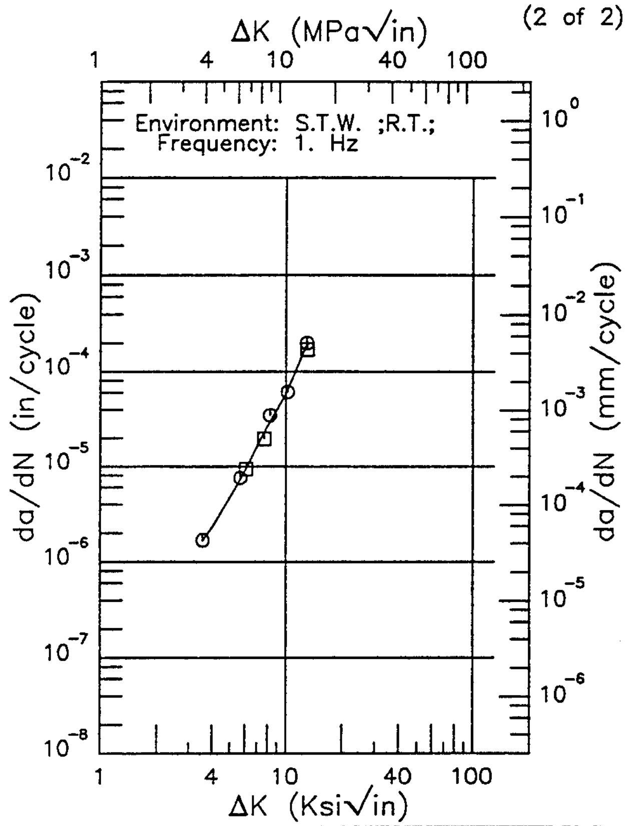


ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
2.73 (min)	0.461
3.	0.677
3.5	0.974
4.	1.13
5.	1.37
6.	1.98
7.	3.55
8.	6.89
9.	13.5
10.	25.1
11.73 (max)	57.7

RMS % Error: 10.62

Life Prediction Ratio Summary: 0. .5 .8 1.25 2.

(2 of 2)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
3.55 (min)	1.67
4.	2.29
5.	4.71
6.	9.18
7.	16.4
8.	26.7
9.	40.1
10.	58.2
13.	200.
13.03 (max)	203.

RMS % Error: 10.59

Life Prediction Ratio Summary: 0. .5 .8 1.25 2.

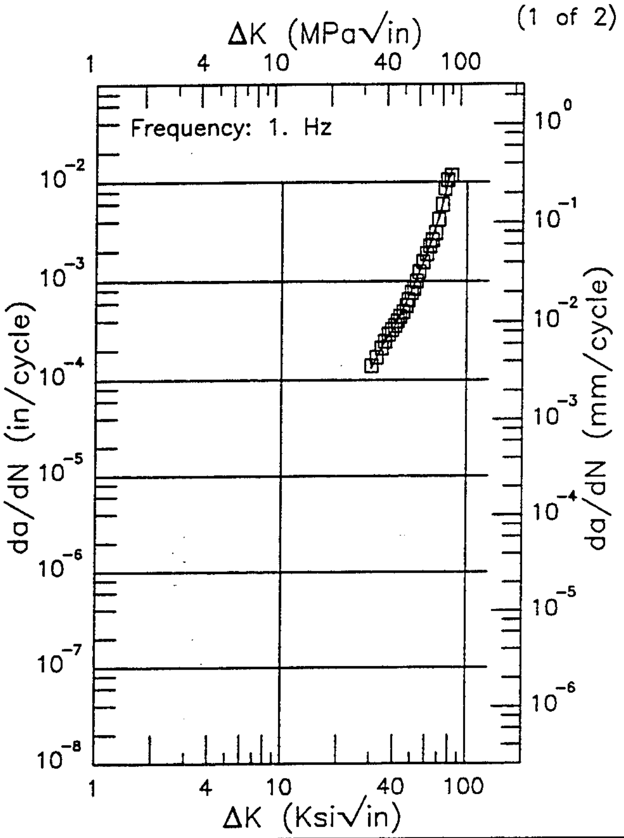
Figure 8.19.3.1.54

F

7475

Condition/Ht: T7351
Form: 1.75 in. Plate
Specimen Type: CCP (max load specified)
Orientation: L–T
Stress Ratio: –1
Environment: LAB AIR; RT

Yield Strength: 63.2 ksi
Ult. Strength: 73.7 ksi
Specimen Thk: 0.202 in.
Specimen Width: 12.025 in.
Ref: DA004

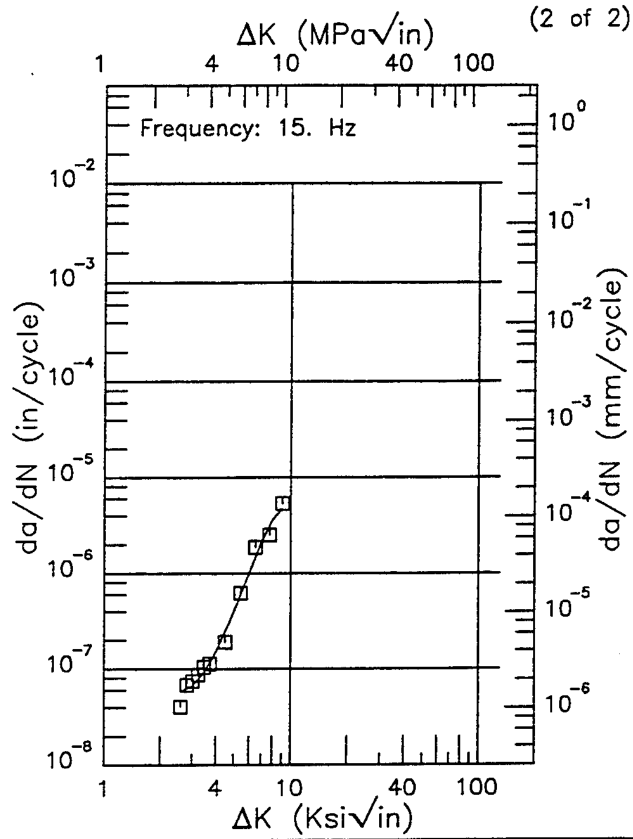


ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
30.23 (min)	132.
35.	230.
40.	335.
50.	802.
60.	1793.
70.	4378.
80.	11260.
81.40 (max)	11916.

RMS % Error: 5.19

Life Prediction Ratio Summary

0. .5 .8 1.25 2.



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
2.59 (min)	0.0584
3.	0.0662
3.5	0.0948
4.	0.150
5.	0.401
6.	0.999
7.	2.12
8.	3.56
8.98 (max)	4.64

RMS % Error: 17.74

Life Prediction Ratio Summary

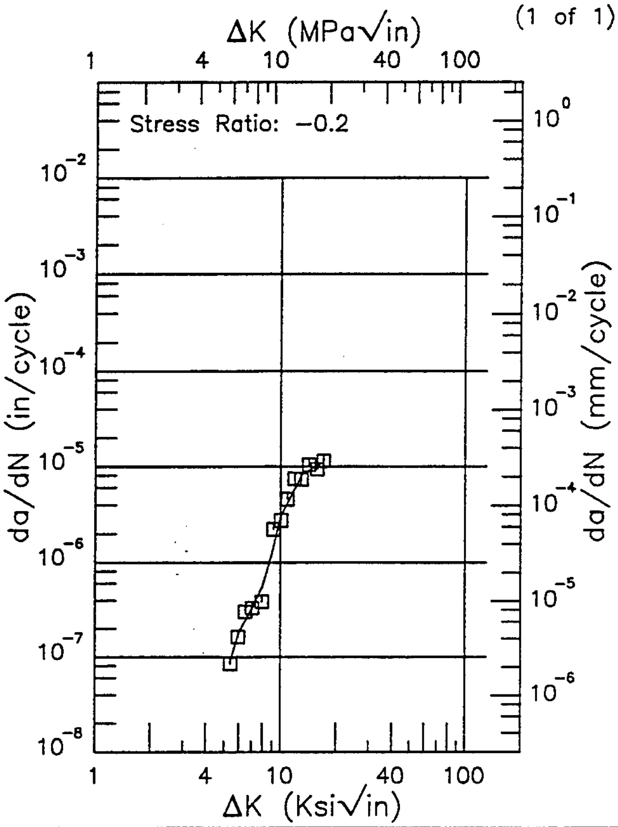
0. .5 .8 1.25 2.

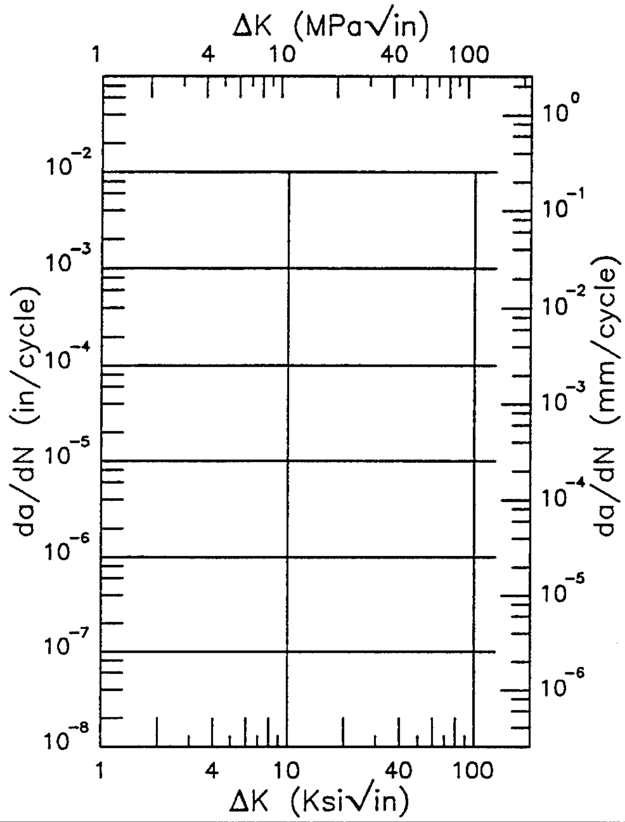
Figure 8.19.3.1.55

Condition/Ht: T7351
Form: 0.5 in. Plate
Specimen Type: CCP (max load specified)
Orientation: L–T
Frequency: 1 Hz
Environment: S.T.W.; RT

Yield Strength: 59.5 ksi
Ult. Strength: 69.1 ksi
Specimen Thk: 0.2 in.
Specimen Width: 5.99 in.
Ref: GD006

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
5.37 (min)	0.0873
6.	0.181
7.	0.327
8.	0.566
9.	1.28
10.	3.02
13.	8.15
16.	10.4
16.99 (max)	11.0

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error	Life Prediction Ratio Summary
22.40	0. .5 .8 1.25 2.

RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

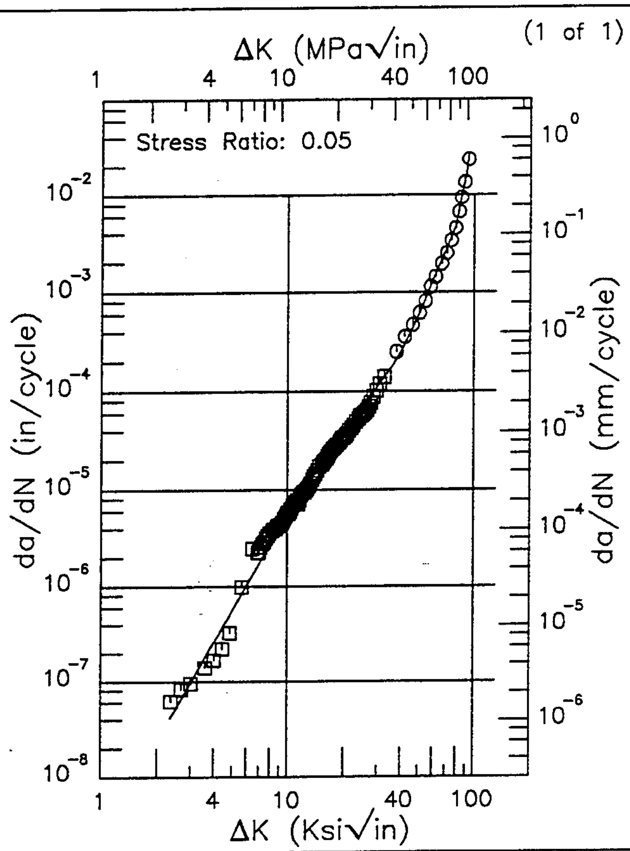
Figure 8.19.3.1.56

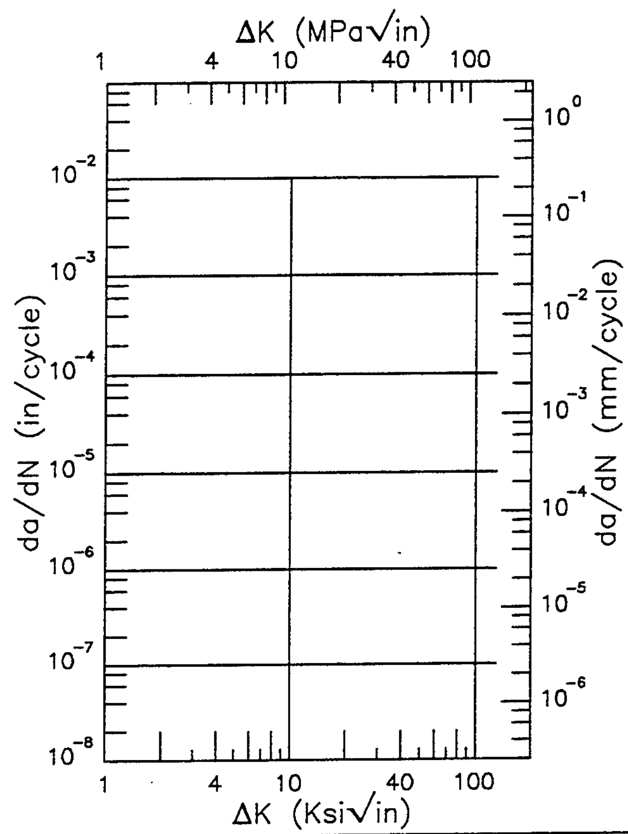
R 7475

Condition/Ht: T7351
Form: 1.75 in. Plate
Specimen Type: CCP (max load specified)
Orientation: L–T
Frequency: 5 Hz
Environment: LAB AIR; RT

Yield Strength: 63.2–68.8 ksi
Ult. Strength: 73.7 ksi
Specimen Thk: 0.201–0.202 in.
Specimen Width: 12.033–12.063 in.
Ref: DA005;DA004

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
2.36 (min)	0.0415
3.	0.0953
4.	0.258
5.	0.552
6.	1.02
7.	1.70
8.	2.62
9.	3.81
10.	5.31
16.	21.6
20.	39.9
30.	112.
40.	251.
60.	1312.
80.	5120.
92.52 (max)	26086.

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error
19.40

Life Prediction Ratio Summary
0. .5 .8 1.25 2.

RMS % Error

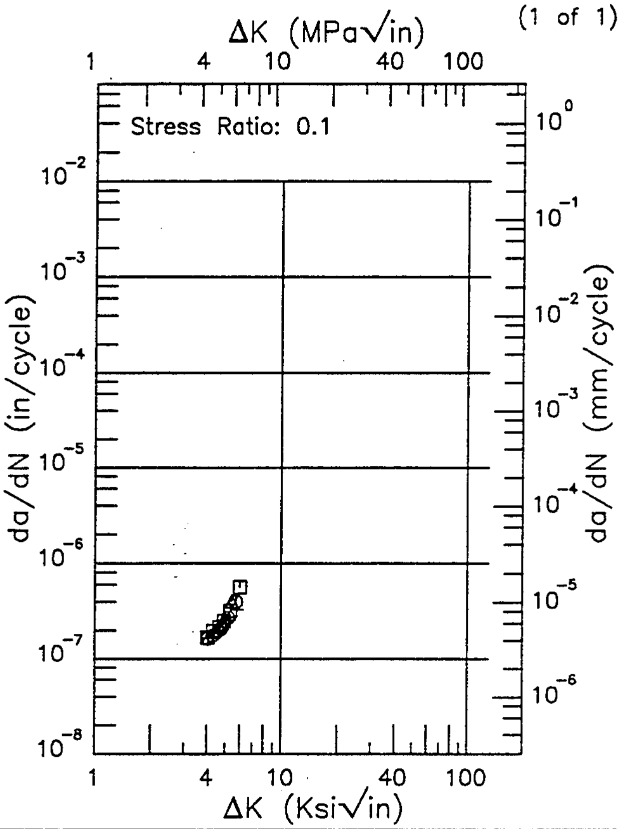
Life Prediction Ratio Summary
0. .5 .8 1.25 2.

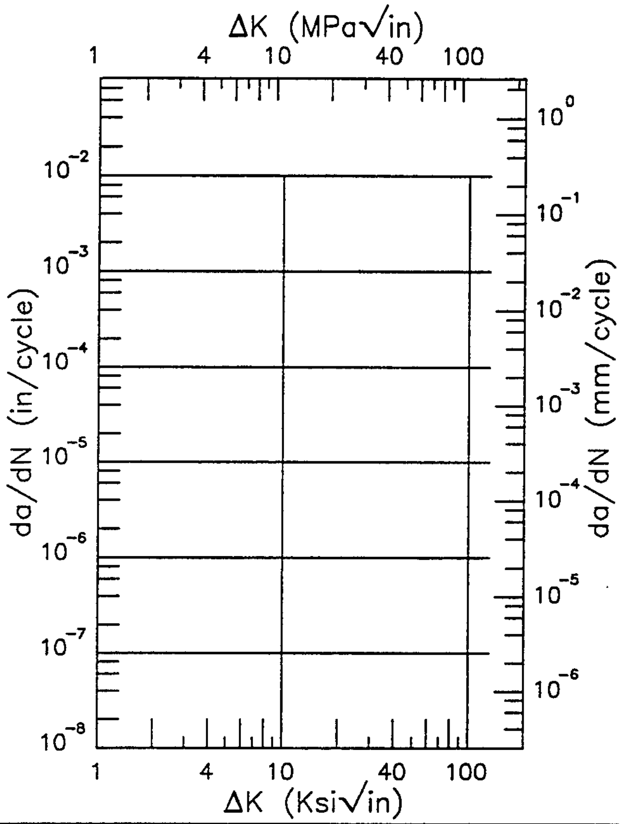
Figure 8.19.3.1.57

Condition/Ht: T7351
Form: 0.52 in. Plate
Specimen Type: CCP (max stress specified)
Orientation: L–T
Frequency: 9 – 30 Hz
Environment: H.H.A.; RT

Yield Strength: 57 ksi
Ult. Strength:
Specimen Thk: 0.52 in.
Specimen Width: 6 in.
Ref: BL002

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
3.99 (min)	0.166
4.	0.166
5.	0.257
5.96 (max)	0.494

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error	Life Prediction Ratio Summary
9.45	0. .5 .8 1.25 2.

RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

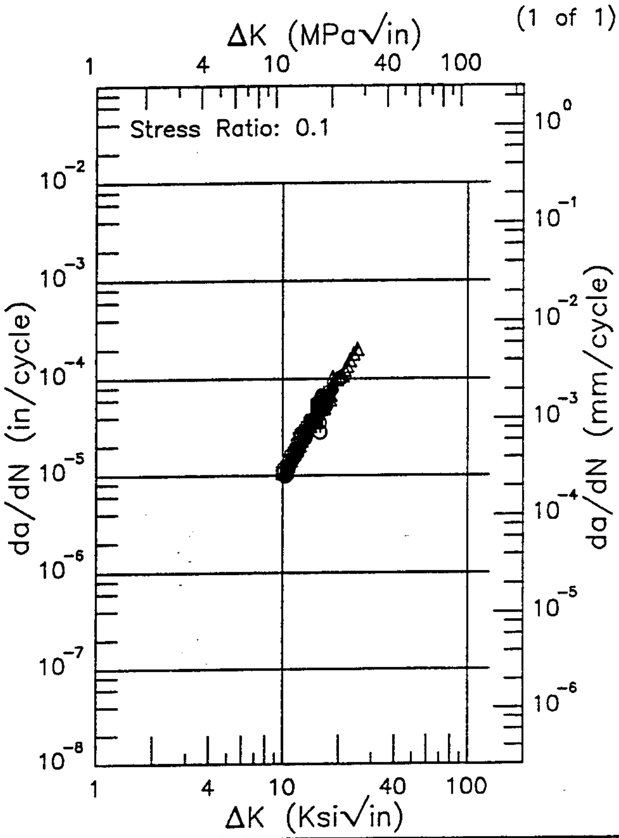
Figure 8.19.3.1.58

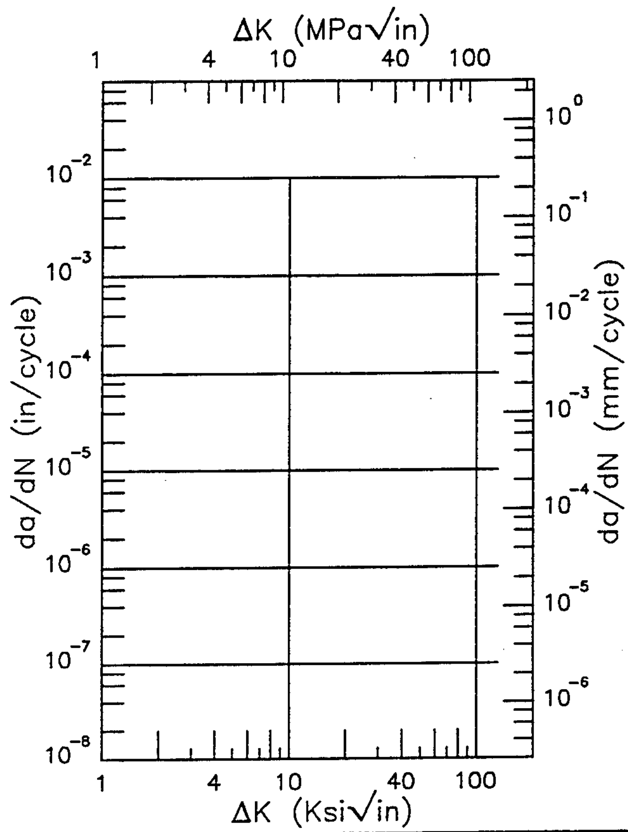
R 7475

Condition/Ht: T7351
Form: 0.52 in. Plate
Specimen Type: CCP (max stress specified)
Orientation: L-T
Frequency: 9 – 30 Hz
Environment: H.H.A.; RT

Yield Strength: 57 ksi
Ult. Strength:
Specimen Thk: 0.5 in.
Specimen Width: 4 in.
Ref: BL002

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
9.92 (min)	9.94
10.	10.2
13.	25.5
16.	51.1
20.	100.
25.	204.
25.08 (max)	206.

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error	Life Prediction Ratio Summary
10.16	0. .5 .8 1.25 2.

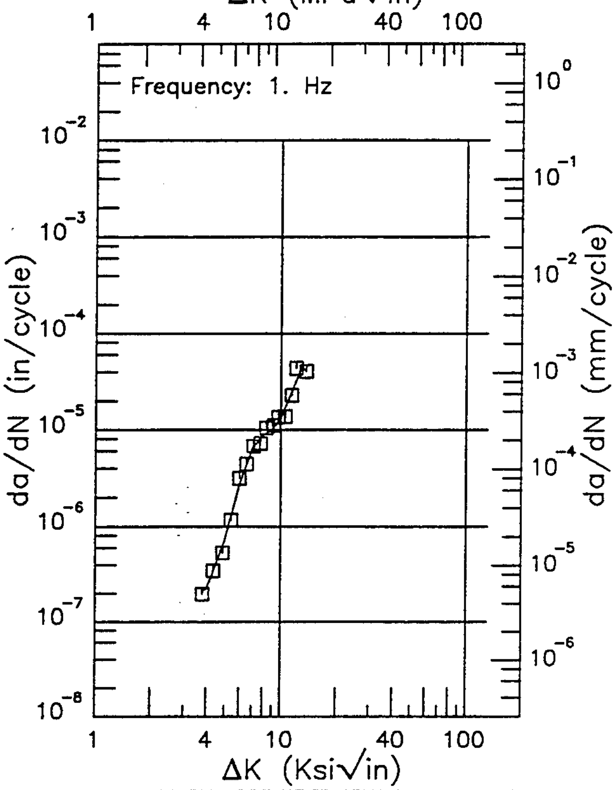
RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

Figure 8.19.3.1.59

Condition/Ht: T7351
Form: 0.5 in. Plate
Specimen Type: CCP (max load specified)
Orientation: L–T
Stress Ratio: 0.1
Environment: S.T.W.; RT

Yield Strength: 59.5 ksi
Ult. Strength: 69.1 ksi
Specimen Thk: 0.199 – 0.205 in.
Specimen Width: 5.99 – 6 in.
Ref: GD006

(1 of 2)



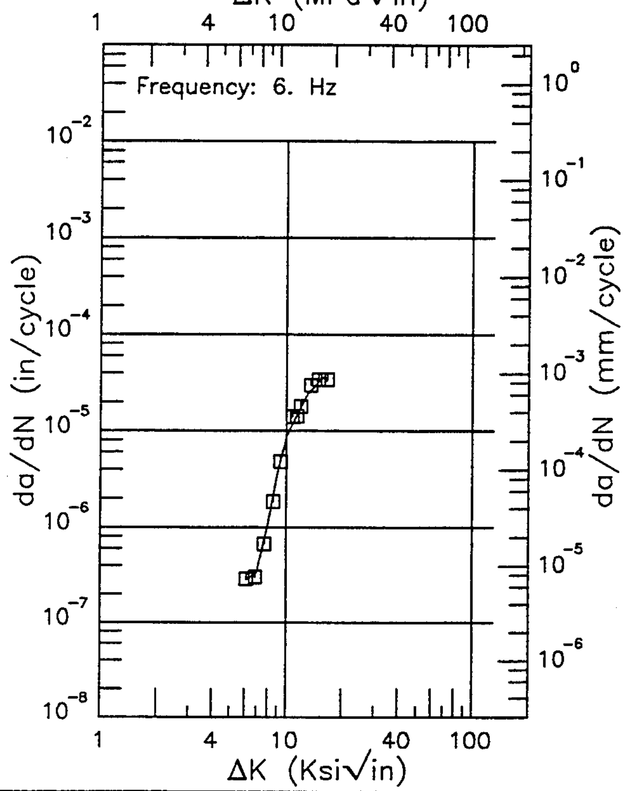
ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
3.77 (min)	0.208
4.	0.225
5.	0.720
6.	2.72
7.	6.44
8.	8.78
9.	10.2
10.	13.3
13.	45.2
13.62 (max)	41.3

RMS % Error 14.08

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

(2 of 2)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
6.13 (min)	0.285
7.	0.336
8.	1.03
9.	3.52
10.	8.55
13.	24.1
16.	36.2
16.61 (max)	33.3

RMS % Error 8.39

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

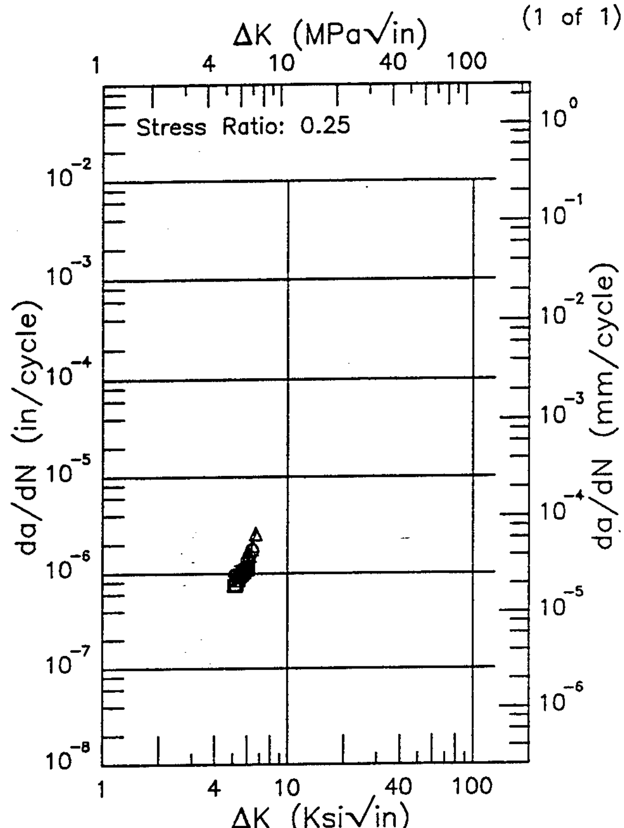
Figure 8.19.3.1.60

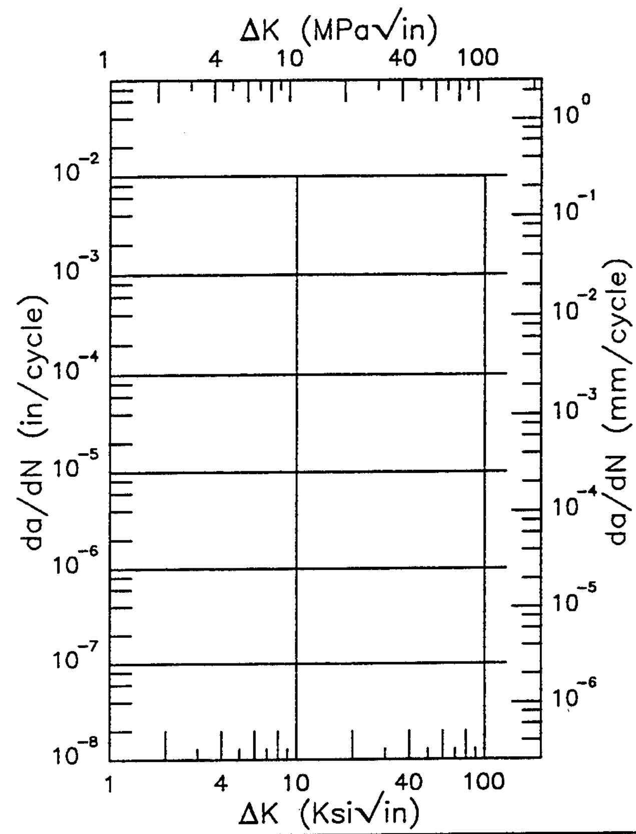
R 7475

Condition/Ht: T7351
Form: 0.52 in. Plate
Specimen Type: CCP (max stress specified)
Orientation: L–T
Frequency: 5.5 – 33 Hz
Environment: H.H.A.; RT

Yield Strength: 57 ksi
Ult. Strength:
Specimen Thk: 0.524 in.
Specimen Width: 4 in.
Ref: BL002

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)
5.05 (min)	0.853
6.	1.23
6.65 (max)	2.56

ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)

RMS % Error 9.97

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

RMS % Error

Life Prediction Ratio Summary

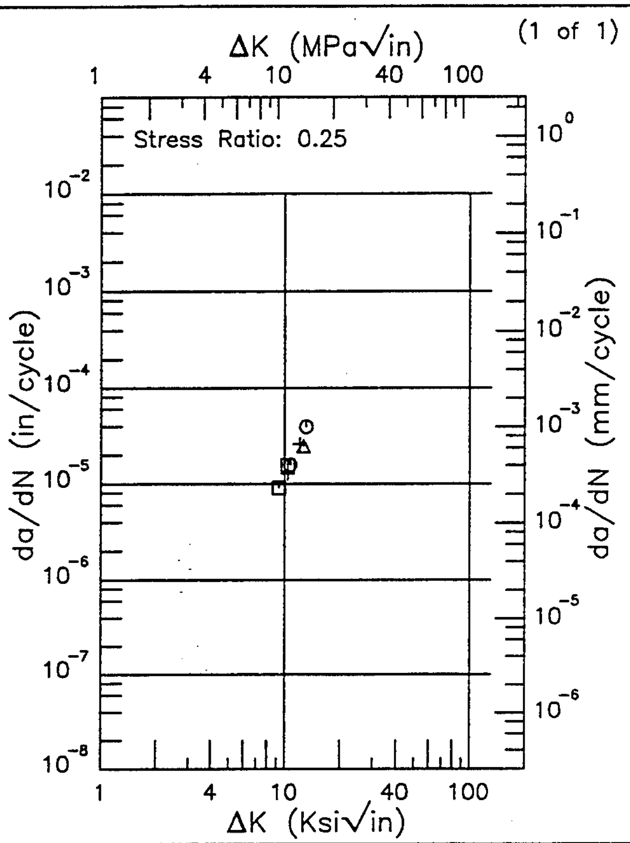
0. .5 .8 1.25 2.

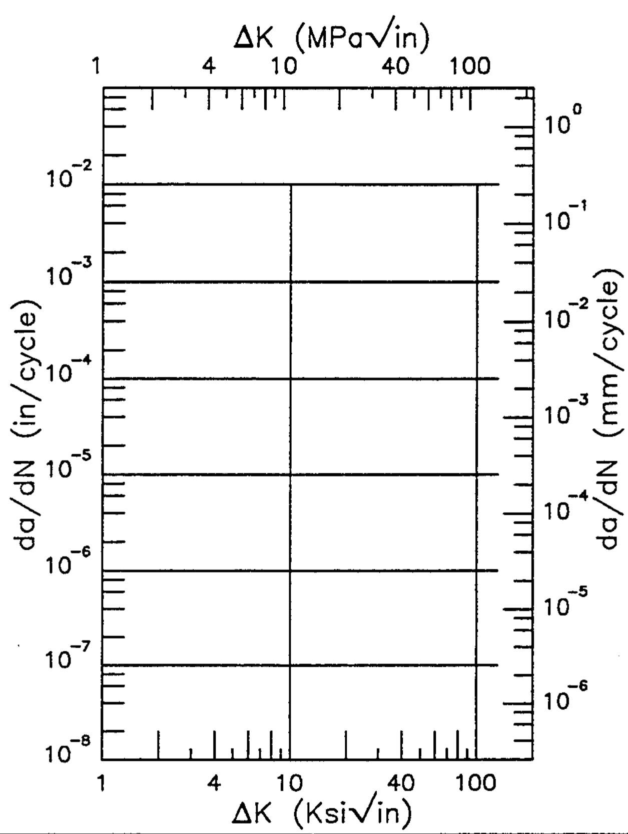
Figure 8.19.3.1.61

Condition/Ht: T7351
Form: 0.52 in. Plate
Specimen Type: CCP (max stress specified)
Orientation: L–T
Frequency: 5.5 – 33 Hz
Environment: H.H.A.; RT

Yield Strength: 57 ksi
Ult. Strength:
Specimen Thk: 0.528 in.
Specimen Width: 4 in.
Ref: BL002

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)	ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error	Life Prediction Ratio Summary	RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.		0. .5 .8 1.25 2.

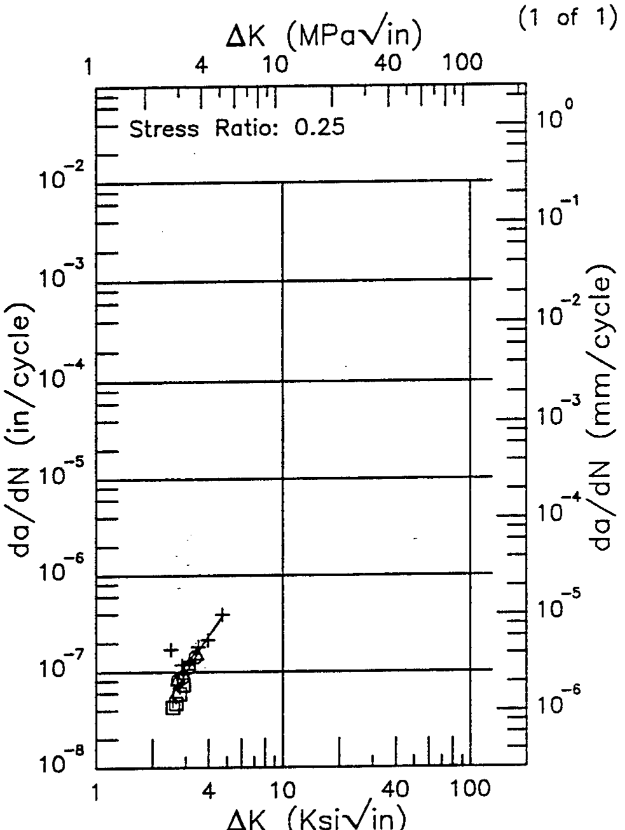
Figure 8.19.3.1.62

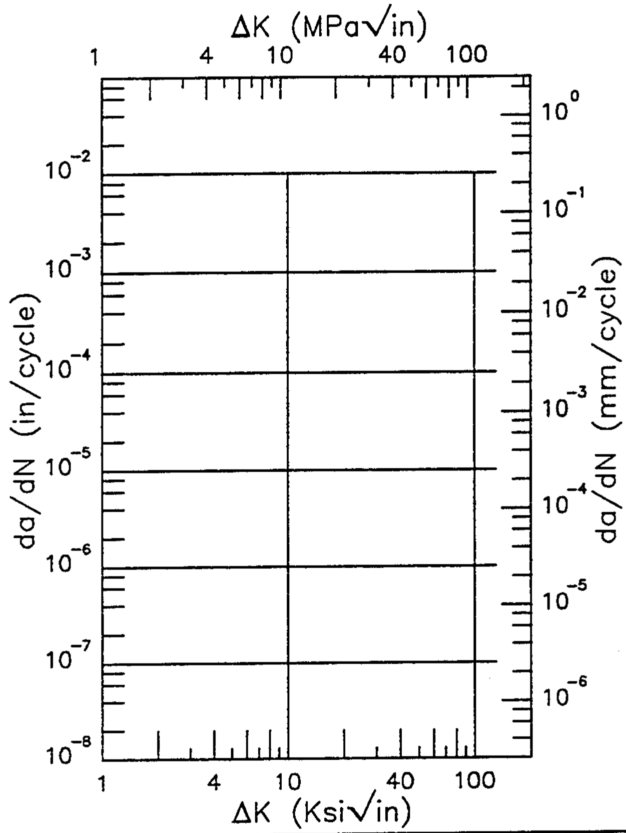
7475 R

Condition/Ht: T7351
Form: 0.52 in. Plate
Specimen Type: CCP (max stress specified)
Orientation: L–T
Frequency: 5.5 – 33 Hz
Environment: H.H.A.; RT

Yield Strength: 57 ksi
Ult. Strength:
Specimen Thk: 0.52 in.
Specimen Width: 6 in.
Ref: BL002

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)
2.50 (min)	0.0554
3.	0.0973
3.5	0.158
4.	0.237
4.73 (max)	0.378

ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)

RMS % Error	Life Prediction Ratio Summary
51.17	0. .5 .8 1.25 2.

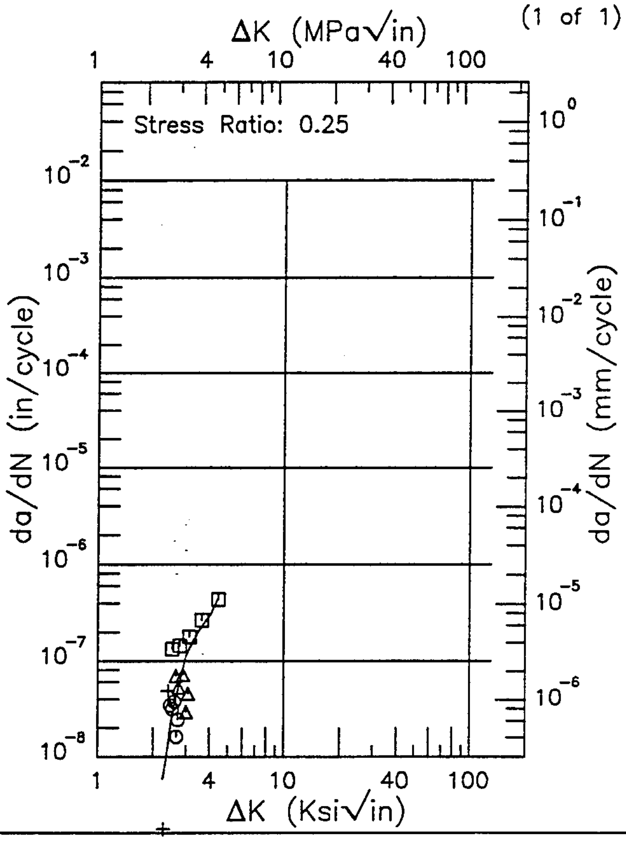
RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

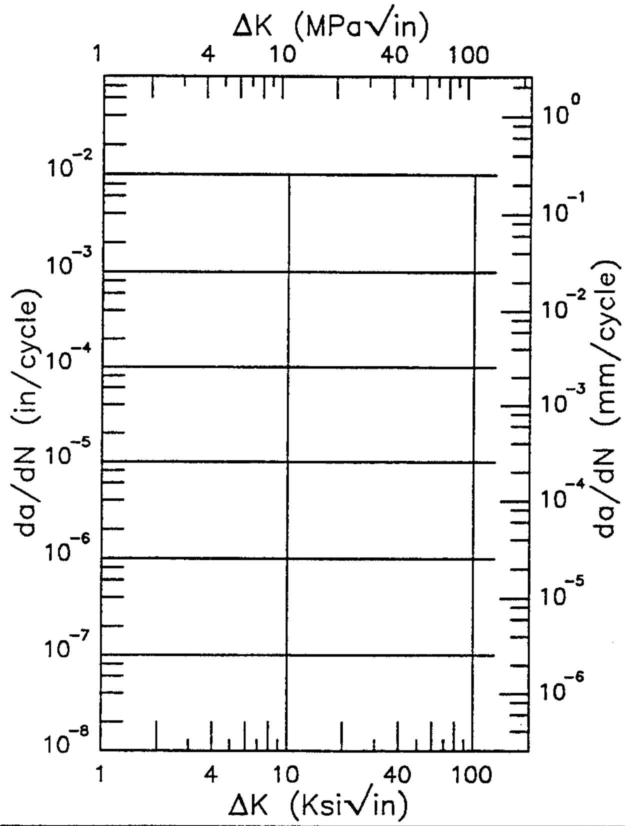
Figure 8.19.3.1.63

Condition/Ht: T7351
Form: 0.52 in. Plate
Specimen Type: CCP (max stress specified)
Orientation: L–T
Frequency: 5.5 – 33 Hz
Environment: H.H.A.; RT

Yield Strength: 57 ksi
Ult. Strength:
Specimen Thk: 0.53 in.
Specimen Width: 6 in.
Ref: BL002

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
2.27 (min)	0.00595
2.5	0.0253
3.	0.116
3.5	0.206
4.	0.298
4.44 (max)	0.459

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error	Life Prediction Ratio Summary
>100.0	△ ⊙ (0.5–0.8); □ (1.25–2.); + (2.) — scale: 0. .5 .8 1.25 2.

RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

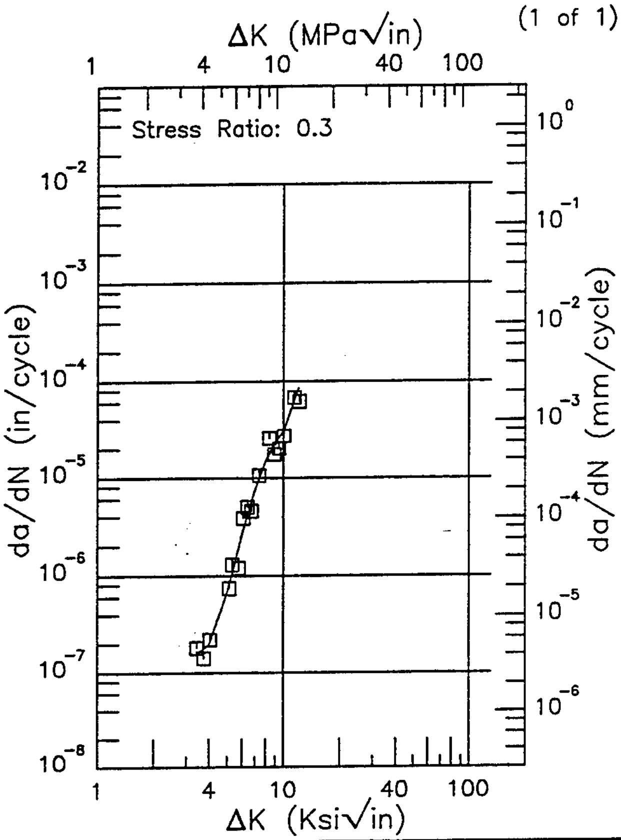
Figure 8.19.3.1.64

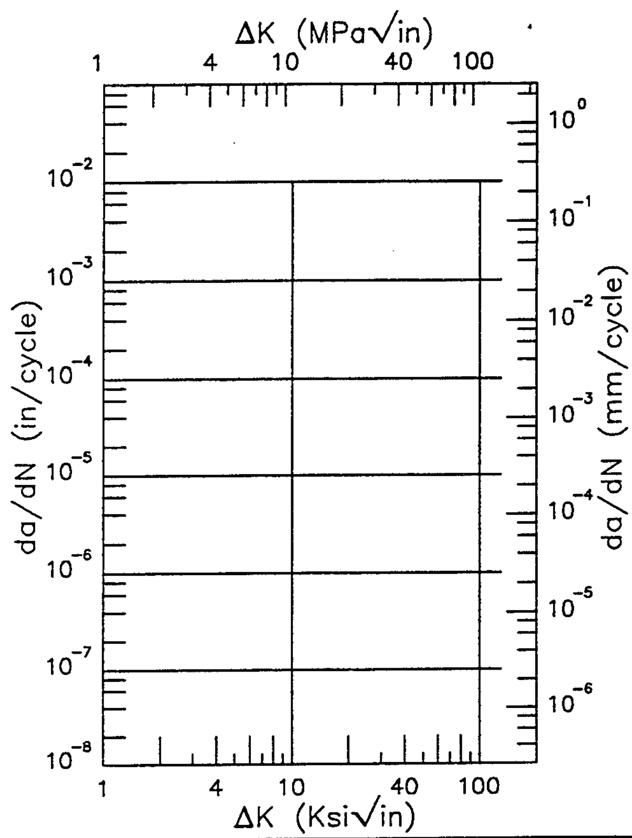
R 7475

Condition/Ht: T7351
Form: 0.5 in. Plate
Specimen Type: CCP (max load specified)
Orientation: L–T
Frequency: 1 Hz
Environment: S.T.W.; RT

Yield Strength: 59.5 ksi
Ult. Strength: 69.1 ksi
Specimen Thk: 0.202 in.
Specimen Width: 6 in.
Ref: GD006

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
3.42 (min)	0.168
3.5	0.163
4.	0.197
5.	0.677
6.	2.64
7.	7.45
8.	15.0
9.	23.2
10.	30.2
12.09 (max)	86.3

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error
23.07

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

RMS % Error

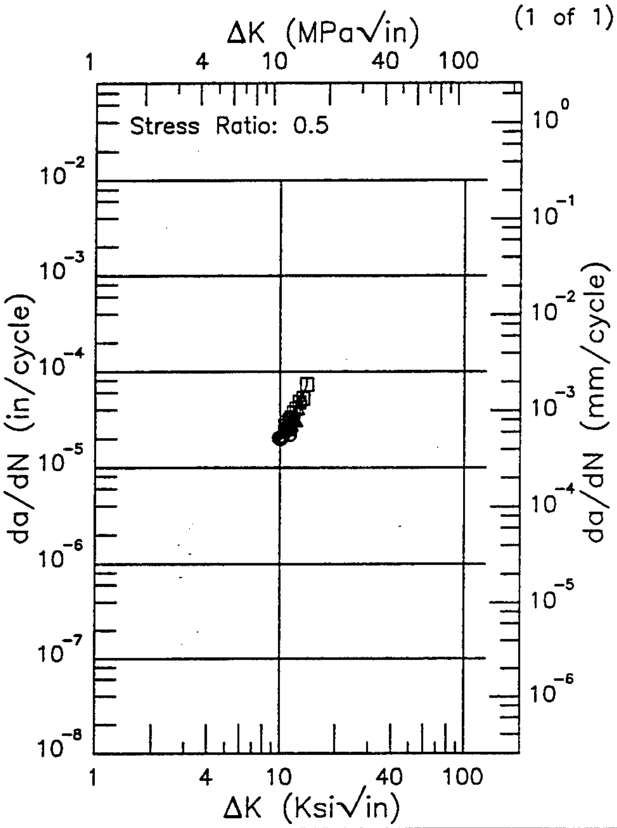
Life Prediction Ratio Summary

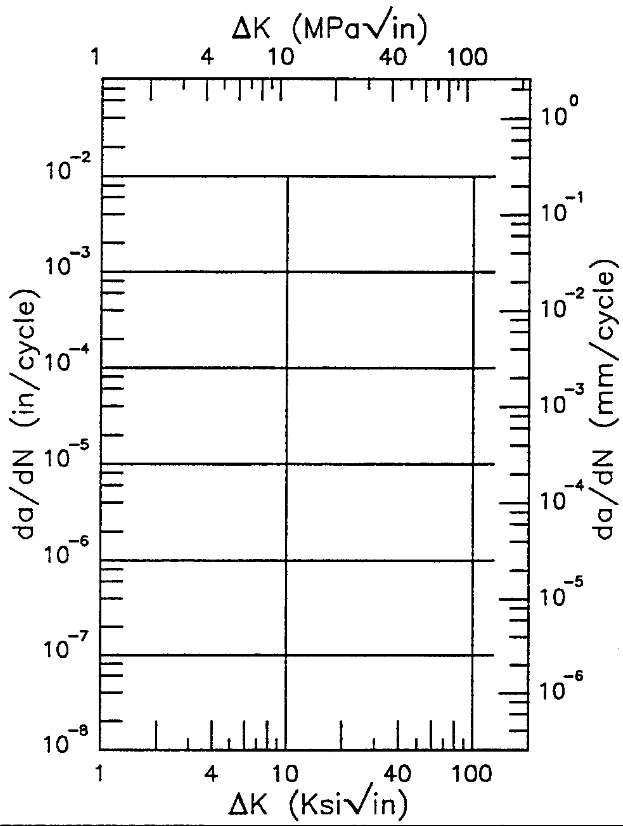
0. .5 .8 1.25 2.

Figure 8.19.3.1.65

Condition/Ht: T7351
Form: 0.52 in. Plate
Specimen Type: CCP (max stress specified)
Orientation: L-T
Frequency: 6 – 33 Hz
Environment: H.H.A.; RT

Yield Strength: 57 ksi
Ult. Strength:
Specimen Thk: 0.525 in.
Specimen Width: 4 in.
Ref: BL002



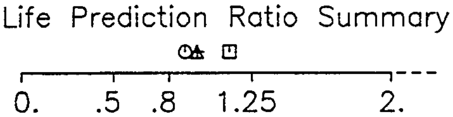


ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
9.78 (min)	18.9
10.	20.6
13.	48.9
13.90 (max)	71.7

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error 9.45

Life Prediction Ratio Summary



RMS % Error

Life Prediction Ratio Summary

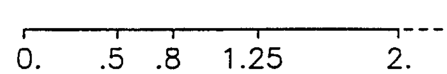


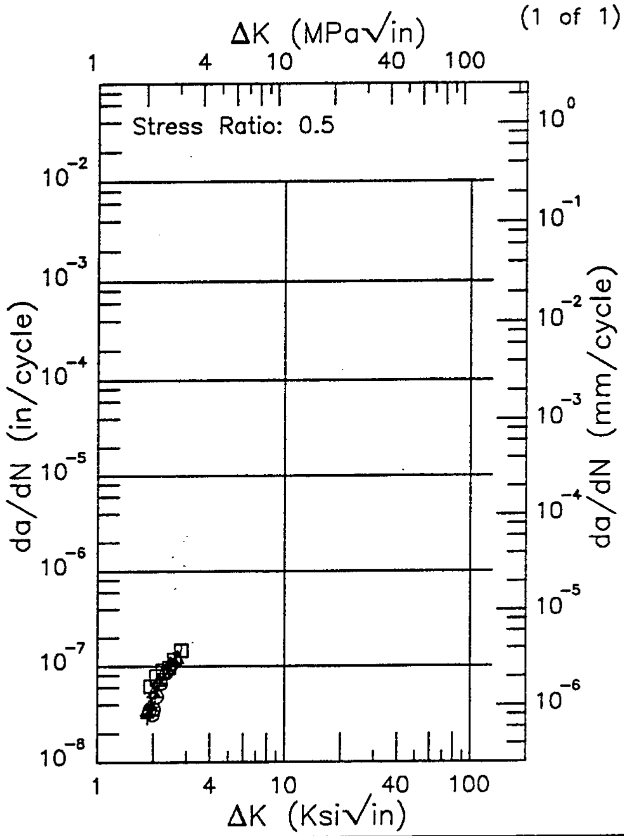
Figure 8.19.3.1.66

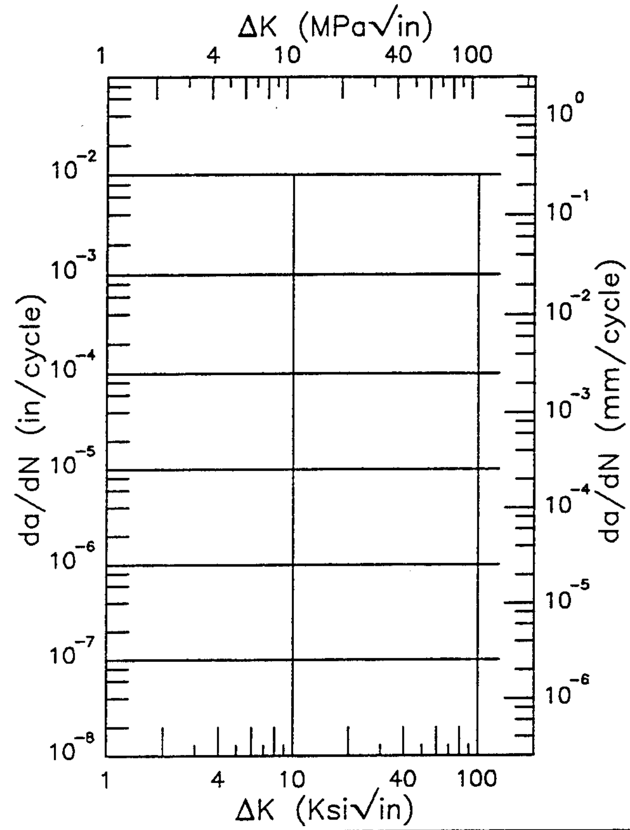
R 7475

Condition/Ht: T7351
Form: 0.52 in. Plate
Specimen Type: CCP (max stress specified)
Orientation: L–T
Frequency: 6 – 33 Hz
Environment: H.H.A.; RT

Yield Strength: 57 ksi
Ult. Strength:
Specimen Thk: 0.53 in.
Specimen Width: 6 in.
Ref: BL002

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
1.84 (min)	0.0310
2.	0.0473
2.5	0.106
2.80 (max)	0.145

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

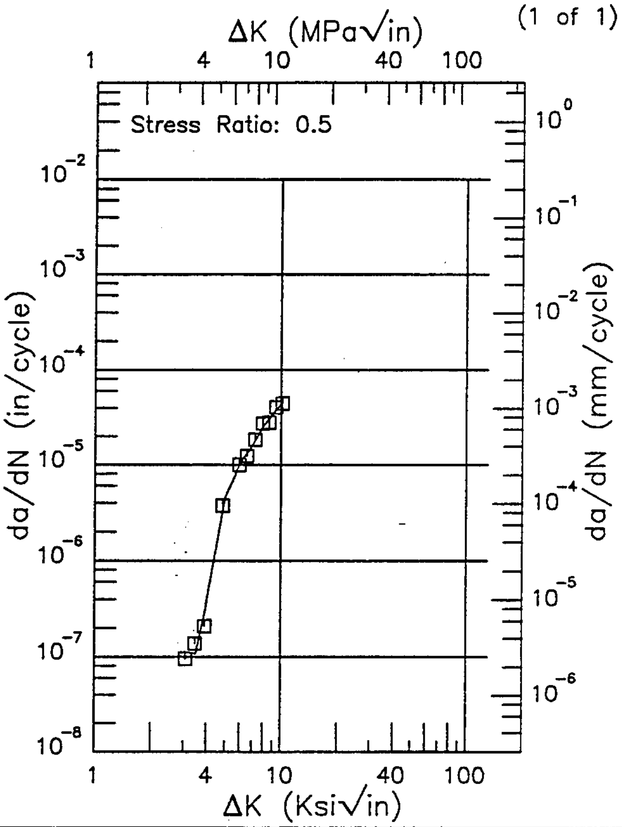
RMS % Error	Life Prediction Ratio Summary
19.64	⊖+△⊡ 0. .5 .8 1.25 2.

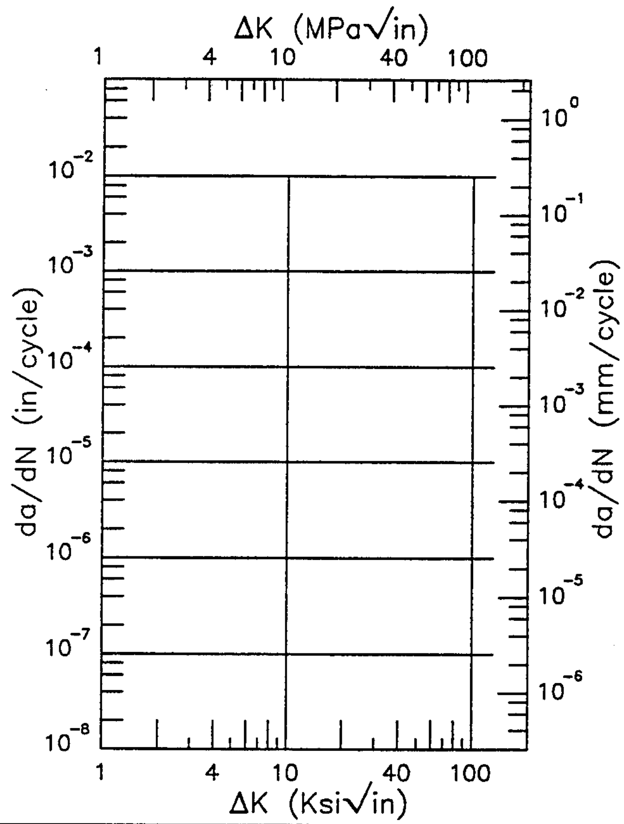
RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

Figure 8.19.3.1.67

Condition/Ht: T7351
Form: 0.5 in. Plate
Specimen Type: CCP (max load specified)
Orientation: L–T
Frequency: 1 Hz
Environment: S.T.W.; RT

Yield Strength: 59.5 ksi
Ult. Strength: 69.1 ksi
Specimen Thk: 0.201 in.
Specimen Width: 5.99 in.
Ref: GD006





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
3.05 (min)	0.113
3.5	0.108
4.	0.383
5.	4.57
6.	10.4
7.	16.2
8.	25.6
9.	34.9
10.	43.7
10.13 (max)	45.0

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error	Life Prediction Ratio Summary
14.74	0. .5 .8 1.25 2.

RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

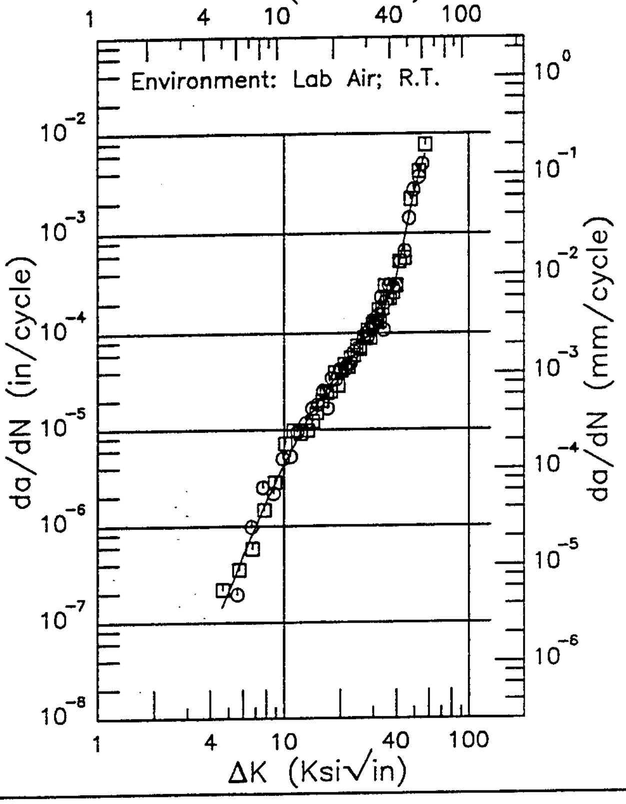
Figure 8.19.3.1.68

E ⊣ 7475 ⊢

Condition/Ht: T7351
Form: 1.25 in. Plate
Specimen Type: WOL
Orientation: L–T
Stress Ratio: 0.02
Frequency: 0.1 – 20 Hz

Yield Strength: 62 ksi
Ult. Strength: 70.3 ksi
Specimen Thk: 1.25 in.
Specimen Width: 5 in.
Ref: MA005

(1 of 3)



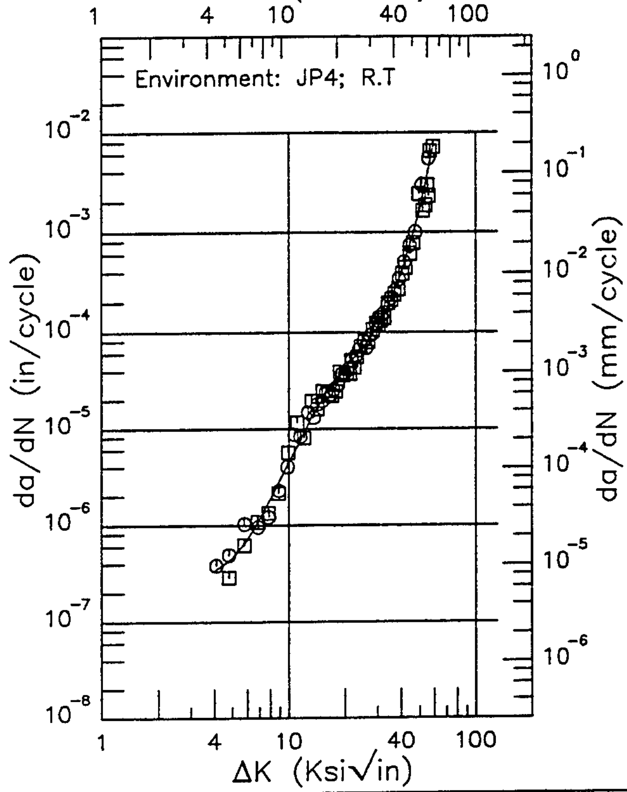
ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
4.63 (min)	0.145
5.	0.209
6.	0.490
7.	0.982
8.	1.76
9.	2.88
10.	4.39
13.	11.6
16.	22.5
20.	41.0
25.	70.3
30.	114.
35.	189.
40.	370.
50.	2576.
57.16 (max)	6220.

RMS % Error
21.07

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

(2 of 3)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
4.07 (min)	0.345
5.	0.456
6.	0.715
7.	1.17
8.	1.88
9.	2.95
10.	4.46
13.	12.2
16.	24.4
20.	43.1
25.	69.3
30.	113.
35.	201.
40.	388.
50.	1633.
58.69 (max)	6795.

RMS % Error
22.05

Life Prediction Ratio Summary

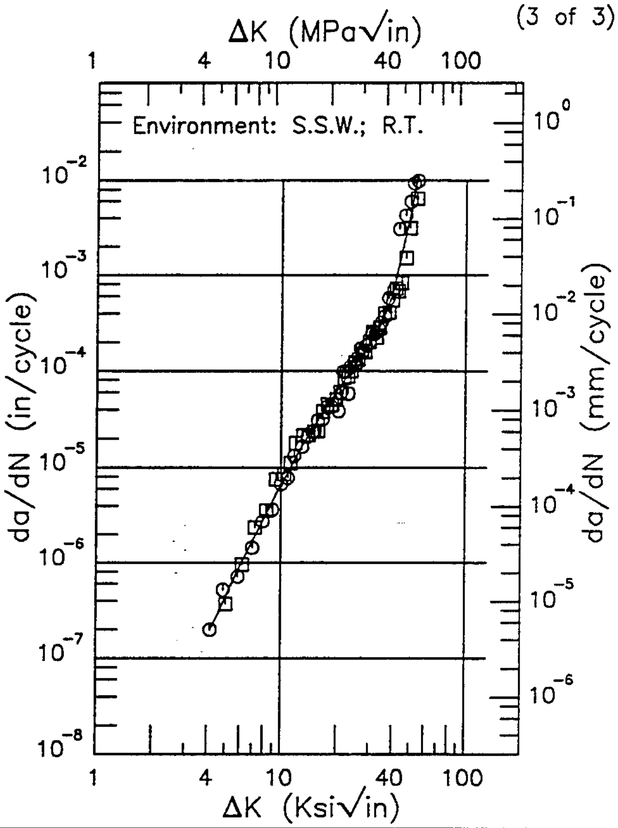
0. .5 .8 1.25 2.

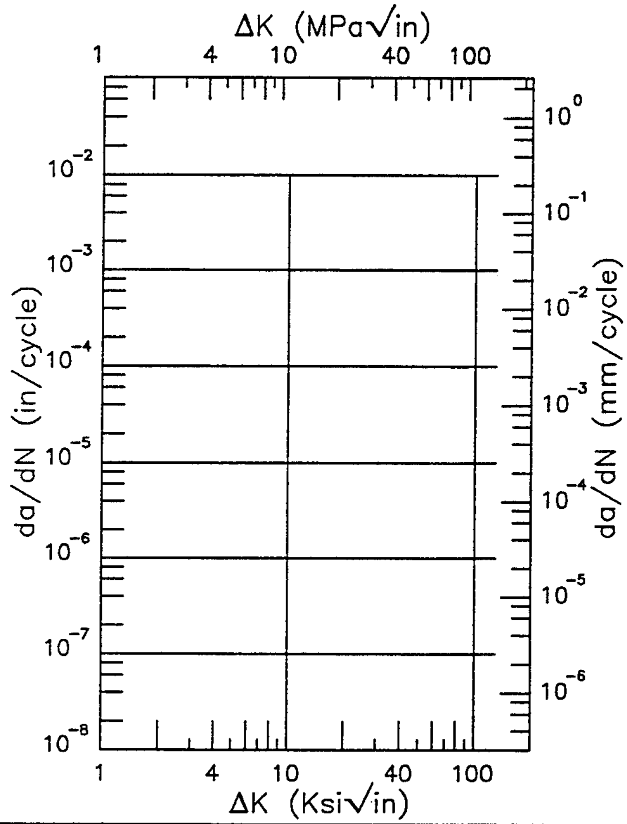
Figure 8.19.3.1.69

Condition/Ht: T7351
Form: 1.25 in. Plate
Specimen Type: WOL
Orientation: L–T
Stress Ratio: 0.02
Frequency: 0.1 – 20 Hz

Yield Strength: 62 ksi
Ult. Strength: 70.3 ksi
Specimen Thk: 1.25 in.
Specimen Width: 5 in.
Ref: MA005

(3 of 3)





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
4.14 (min)	0.195
5.	0.433
6.	0.921
7.	1.72
8.	2.90
9.	4.55
10.	6.73
13.	16.9
16.	32.8
20.	62.6
25.	116.
30.	193.
35.	327.
40.	649.
50.	4415.
54.23 (max)	10659.

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error	Life Prediction Ratio Summary
26.38	0. .5 .8 1.25 2.

RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

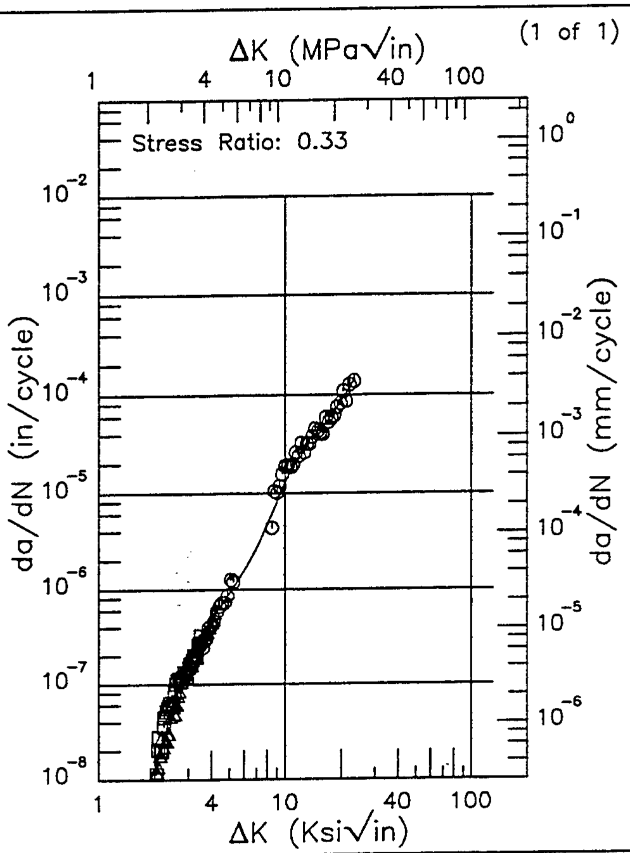
Figure 8.19.3.1.69 (Concluded)

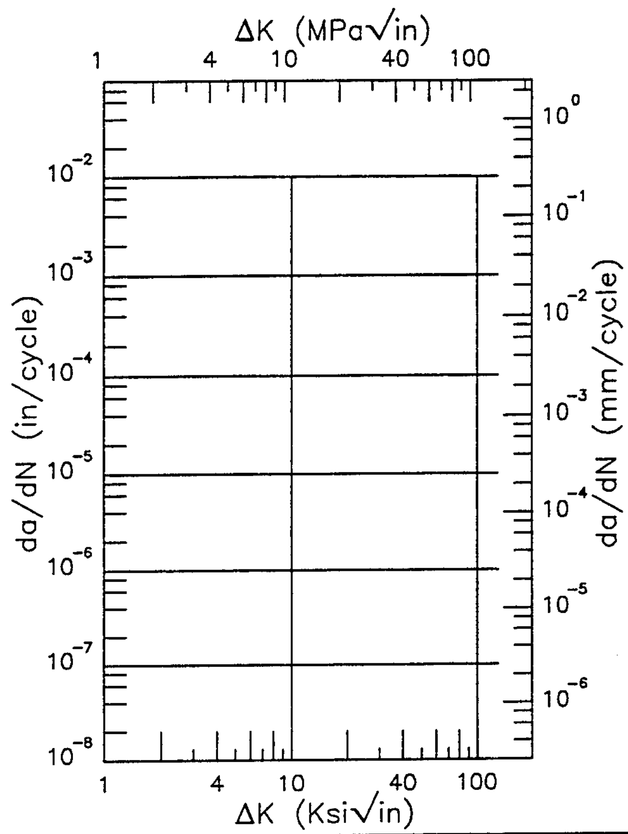
R 7475

Condition/Ht: T7351
Form: 1.5 – 4 in. Plate
Specimen Type: WOL
Orientation: L–T
Frequency: 25 Hz
Environment: H.H.A.; RT

Yield Strength: 64 ksi
Ult. Strength: 74 ksi
Specimen Thk: 0.245 – 0.251 in.
Specimen Width: 2.548 – 2.553 in.
Ref: AL009

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)
2.03 (min)	0.0140
2.5	0.0627
3.	0.164
3.5	0.306
4.	0.478
5.	0.915
6.	1.57
7.	2.68
8.	4.68
9.	8.05
10.	13.0
13.	33.1
16.	48.6
20.	87.6
23.17 (max)	138.

ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)

RMS % Error	Life Prediction Ratio Summary
19.84	0. .5 .8 1.25 2.

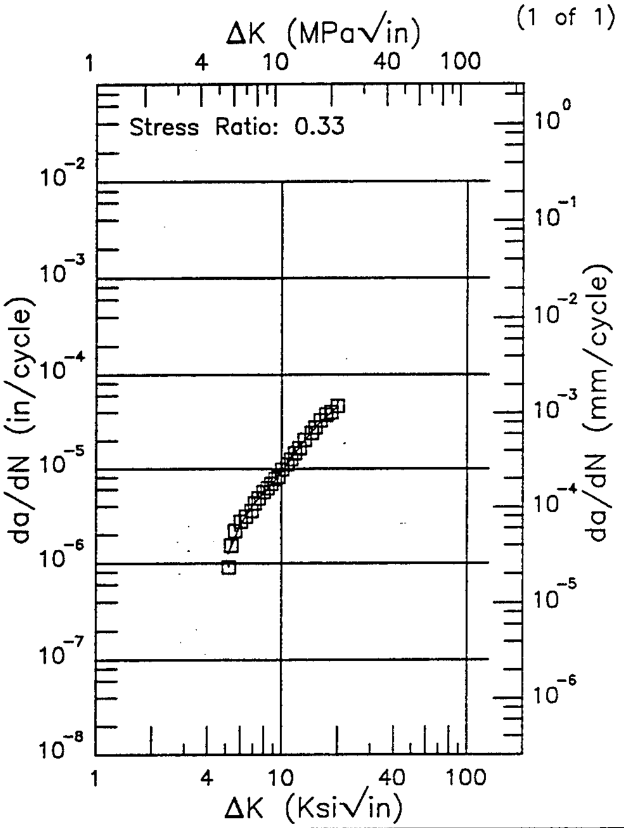
RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

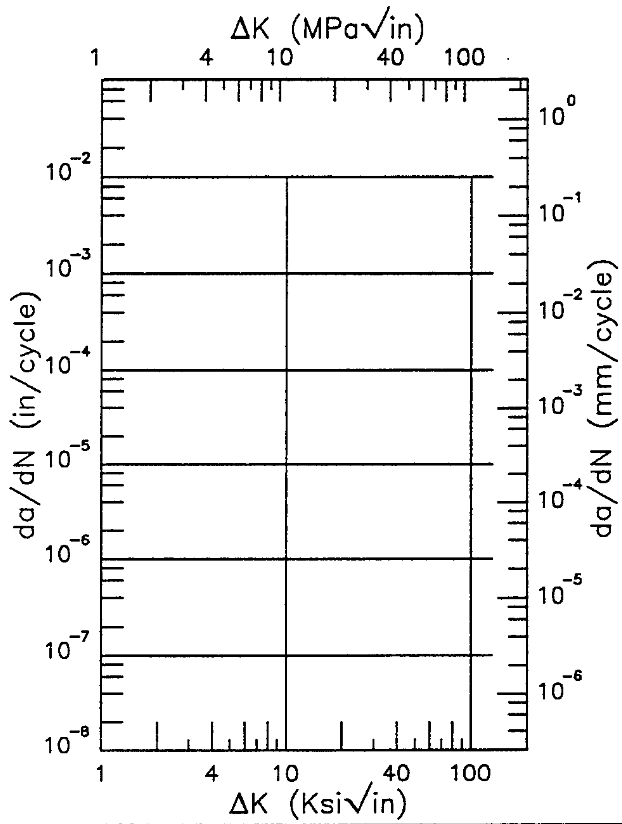
Figure 8.19.3.1.70

Condition/Ht: T76
Form: 0.09 in. Sheet
Specimen Type: CCP (max load specified)
Orientation: T–L
Frequency: 13.3 Hz
Environment: LAB AIR; RT

Yield Strength: 67 ksi
Ult. Strength: 76.2 ksi
Specimen Thk: 0.091 in.
Specimen Width: 4 in.
Ref: 86213

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
5.18 (min)	1.25
6.	2.56
7.	4.10
8.	5.49
9.	7.09
10.	9.29
13.	19.1
16.	31.2
19.87 (max)	45.3

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error	Life Prediction Ratio Summary
7.11	0. .5 .8 1.25 2.

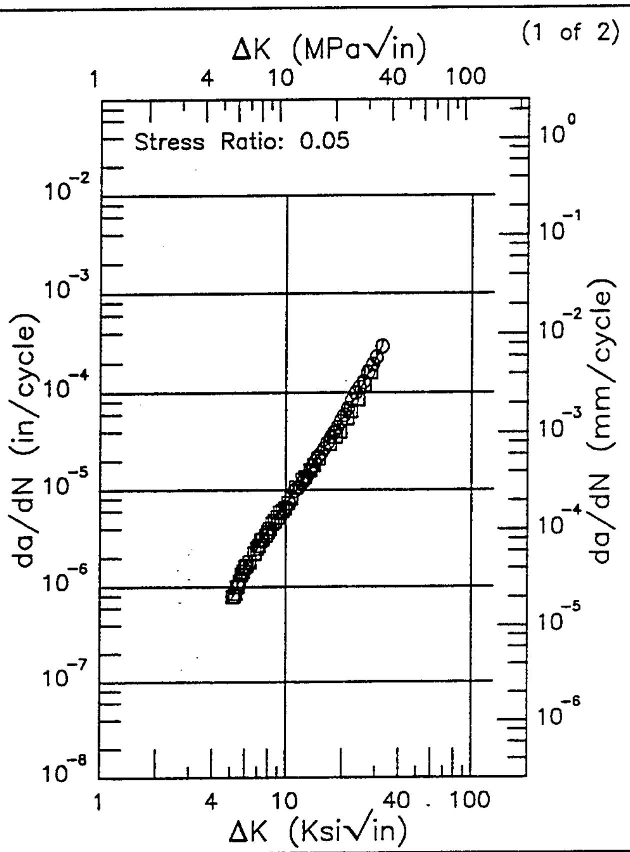
RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

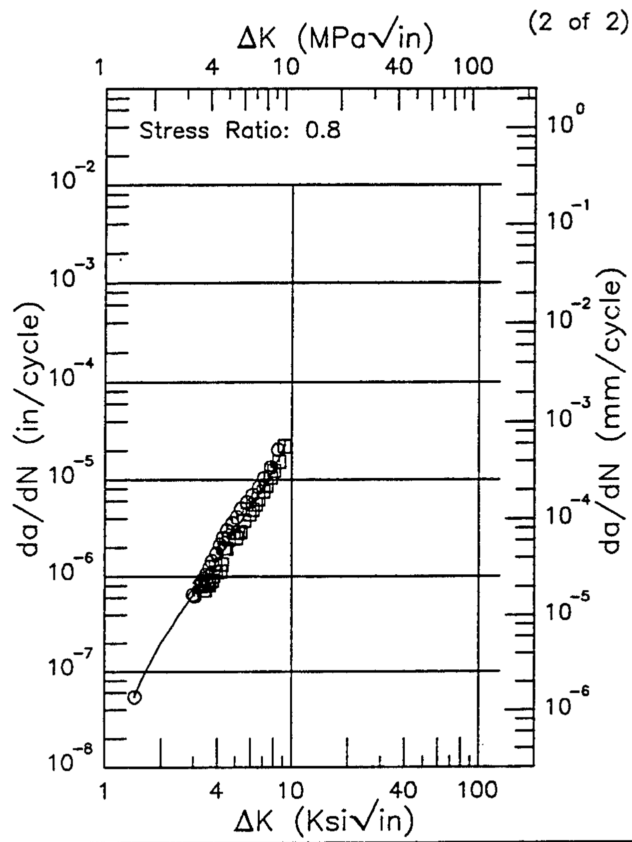
Figure 8.19.3.1.71

R | 7475

Condition/Ht: T761
Form: 0.08 in. Sheet
Specimen Type: CT
Orientation: L-T
Frequency: 1 Hz
Environment: DIST WATER; RT

Yield Strength: 63.2 – 63.7 ksi
Ult. Strength: 73.4 ksi
Specimen Thk: 0.074 – 0.077 in.
Specimen Width: 1.498 – 1.502 in.
Ref: DA004;DA005





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
5.12 (min)	0.770
6.	1.46
7.	2.49
8.	3.76
9.	5.27
10.	7.04
13.	14.5
16.	26.7
20.	52.9
25.	110.
30.	217.
32.45 (max)	291.

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
1.44 (min)	0.0537
1.6	0.0867
2.	0.201
2.5	0.396
3.	0.651
3.5	0.991
4.	1.46
5.	3.02
6.	5.44
7.	8.44
8.	12.6
9.	21.0
9.16 (max)	23.2

RMS % Error: 5.55

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

RMS % Error: 19.15

Life Prediction Ratio Summary

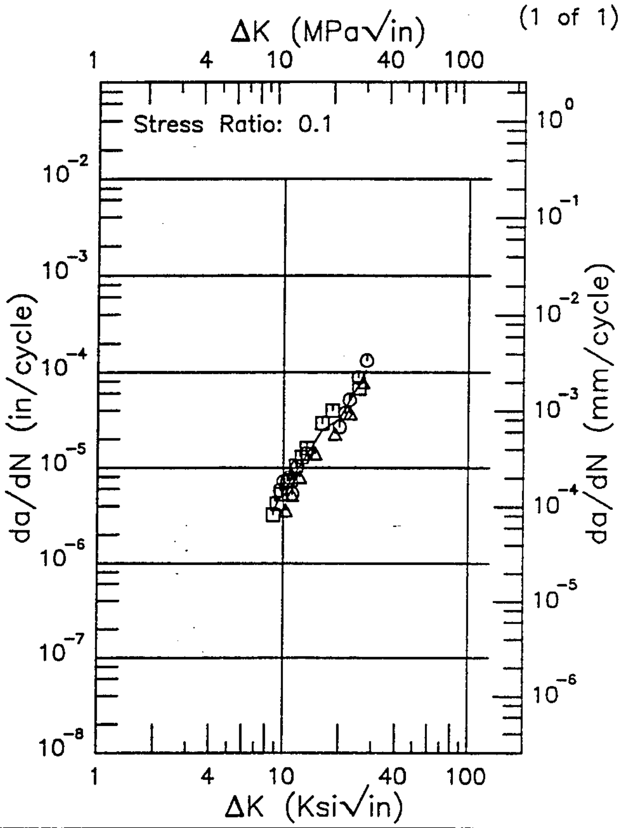
0. .5 .8 1.25 2.

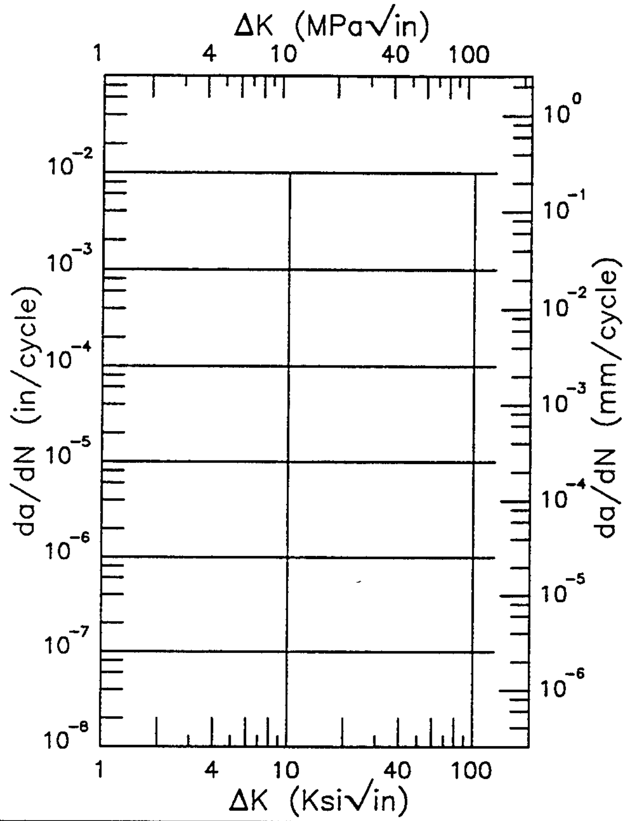
Figure 8.19.3.1.72

Condition/Ht: T761
Form: 0.09 in. Sheet
Specimen Type: CT
Orientation: L–T
Frequency: 20 Hz
Environment: LAB AIR; RT

Yield Strength: 62.2 ksi
Ult. Strength: 70.2 ksi
Specimen Thk: 0.089 in.
Specimen Width: 1.493 – 1.499 in.
Ref: 85363

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)
8.75 (min)	3.53
9.	3.93
10.	5.65
13.	12.4
16.	24.3
20.	32.5
25.	71.5
27.73 (max)	107.

ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)

RMS % Error	Life Prediction Ratio Summary
20.53	0. .5 .8 1.25 2.

RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

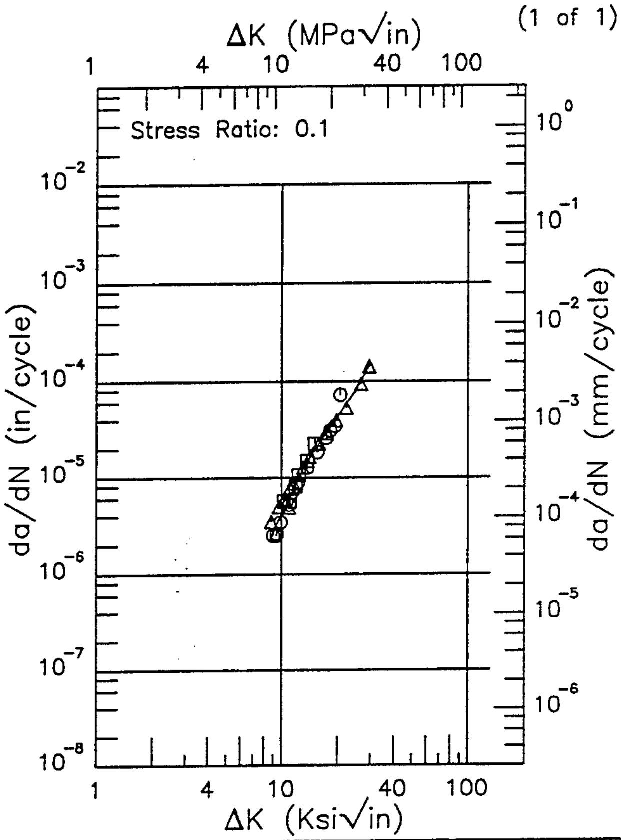
Figure 8.19.3.1.73

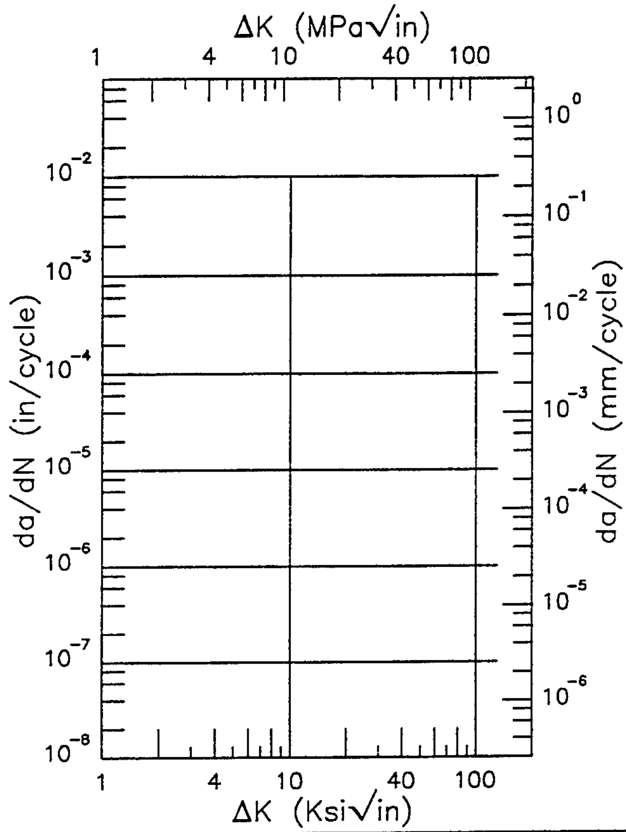
R — 7475

Condition/Ht: T761
Form: 0.09 in. Sheet
Specimen Type: CT
Orientation: T–L
Frequency: 20 Hz
Environment: LAB AIR; RT

Yield Strength: 62.2 ksi
Ult. Strength: 70.2 ksi
Specimen Thk: 0.089 in.
Specimen Width: 1.499 in.
Ref: 85363

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
8.76 (min)	2.39
9.	2.69
10.	4.27
13.	12.5
16.	23.5
20.	43.7
25.	81.1
29.38 (max)	142.

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error	Life Prediction Ratio Summary
18.04	0. .5 .8 1.25 2.

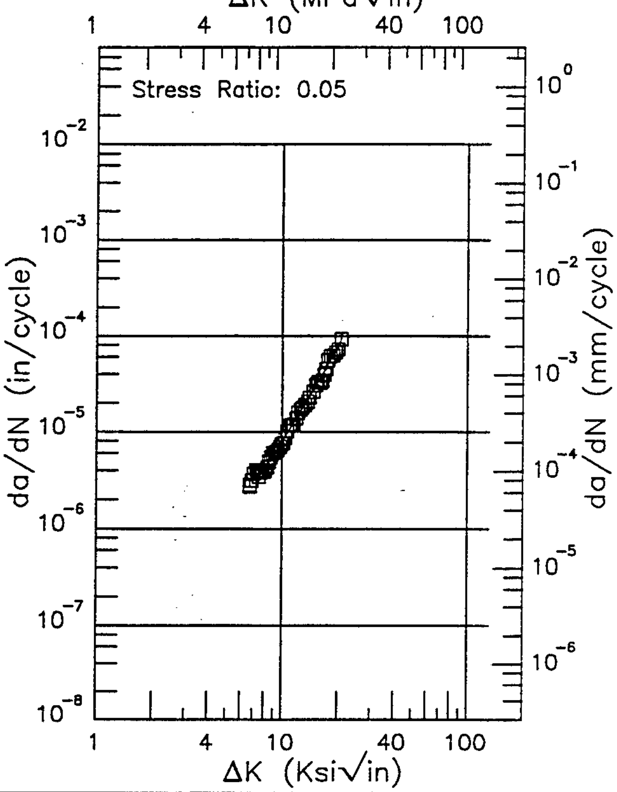
RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

Figure 8.19.3.1.74

Condition/Ht: T761
Form: 0.08 in. Sheet
Specimen Type: CCP (max load specified)
Orientation: L–T
Frequency: 1 Hz
Environment: DIST WATER; RT

Yield Strength: 63.7 ksi
Ult. Strength: 73.4 ksi
Specimen Thk: 0.076 in.
Specimen Width: 3.864 in.
Ref: DA004

(1 of 2)

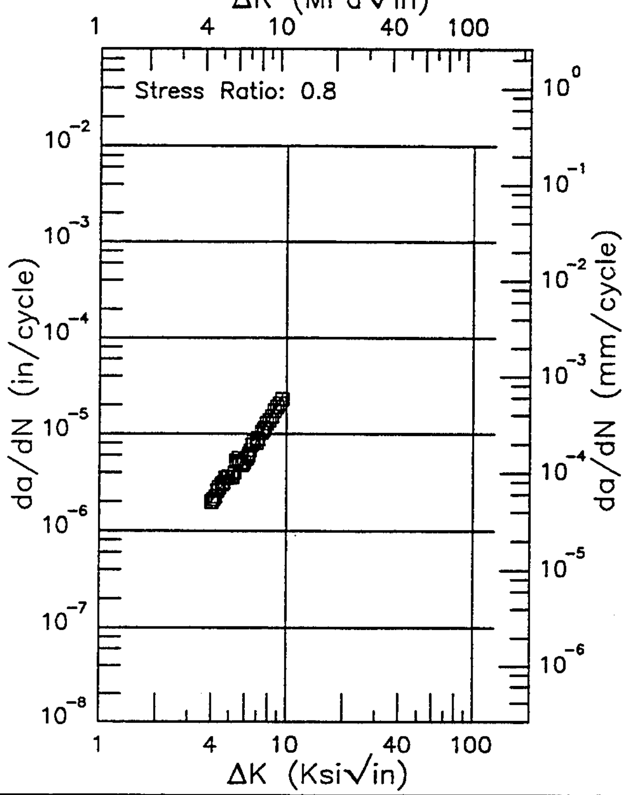


ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
6.70 (min)	3.11
7.	3.29
8.	4.25
9.	5.74
10.	7.85
13.	18.6
16.	36.1
20.	79.1
20.63 (max)	89.7

RMS % Error: 6.23

Life Prediction Ratio Summary

(2 of 2)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
3.99 (min)	1.99
4.	2.02
5.	3.74
6.	5.63
7.	8.60
8.	13.5
9.	19.7
9.40 (max)	22.2

RMS % Error: 7.02

Life Prediction Ratio Summary

Figure 8.19.3.1.75

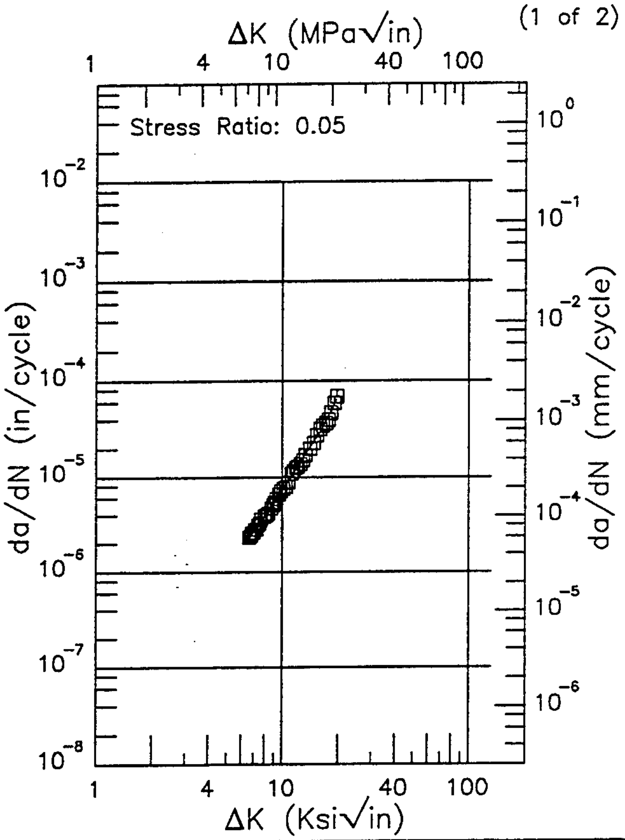
7475

R

Condition/Ht: T761
Form: 0.08 in. Sheet
Specimen Type: CCP (max load specified)
Orientation: L–T
Frequency: 1 Hz
Environment: DIST WATER; RT

Yield Strength: 63.2 ksi
Ult. Strength:
Specimen Thk: 0.077 in.
Specimen Width: 3.951 – 3.953 in.
Ref: DA005

(1 of 2)



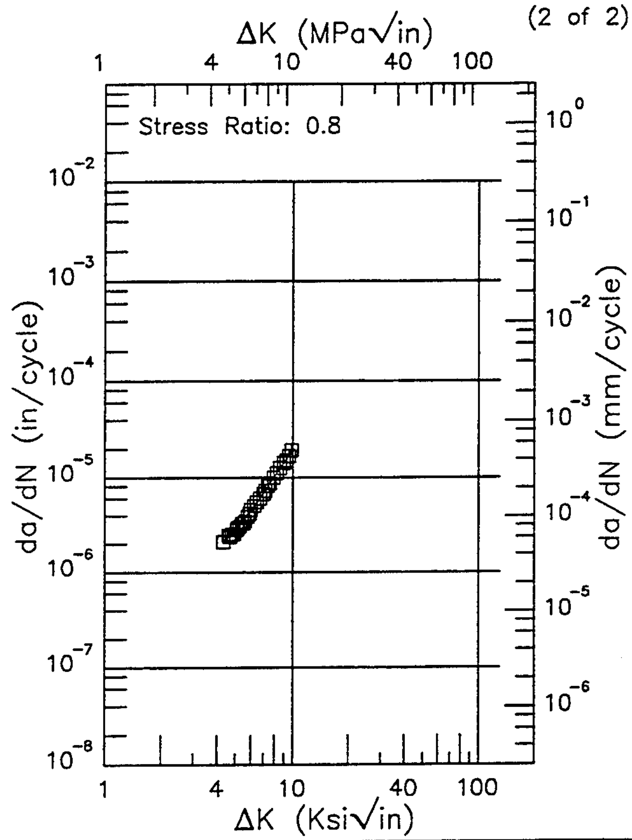
ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
6.61 (min)	2.29
7.	2.65
8.	3.79
9.	5.32
10.	7.27
13.	16.0
16.	30.1
19.49 (max)	64.9

RMS % Error 3.73

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

(2 of 2)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
4.32 (min)	2.10
5.	2.72
6.	4.35
7.	6.91
8.	10.3
9.	14.3
9.85 (max)	18.9

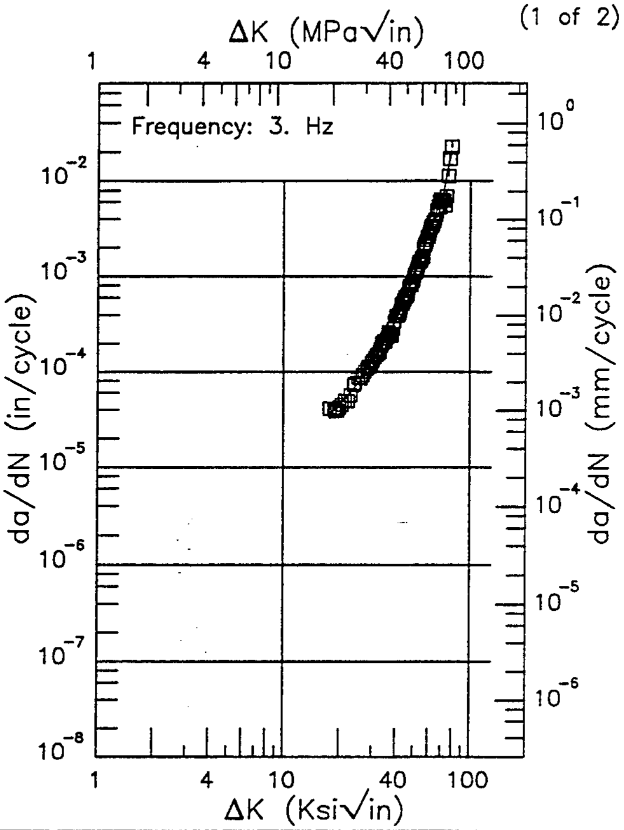
RMS % Error 2.19

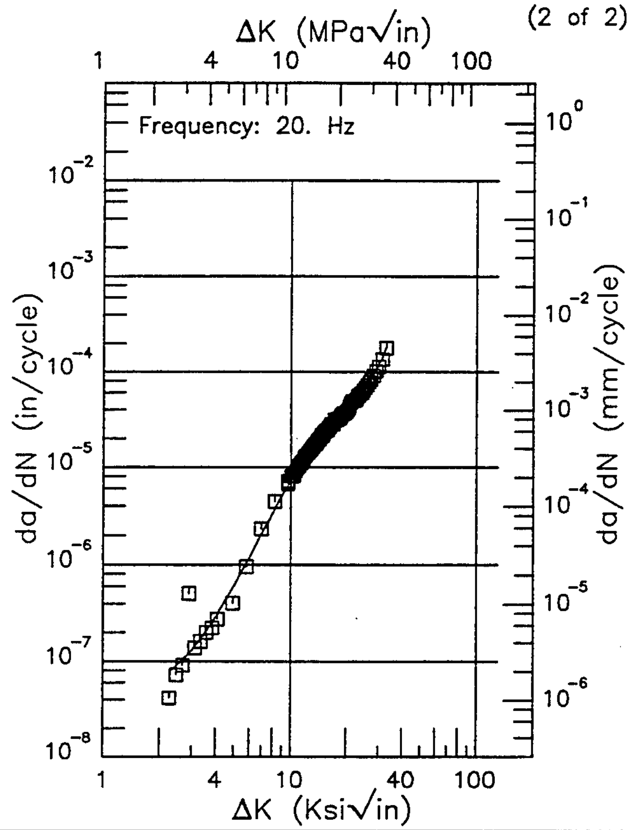
Life Prediction Ratio Summary

0. .5 .8 1.25 2.

Figure 8.19.3.1.76

Condition/Ht: T761	
Form: 0.08 in. Sheet	Yield Strength: 63.7 ksi
Specimen Type: CCP (max load specified)	Ult. Strength: 73.4 ksi
Orientation: L–T	Specimen Thk: 0.073 – 0.074 in.
Stress Ratio: 0.1	Specimen Width: 11.977 – 12.008 in.
Environment: LAB AIR; RT	Ref: DA004





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
17.67 (min)	36.5
20.	44.0
25.	75.0
30.	131.
35.	216.
40.	347.
50.	994.
60.	2852.
70.	5560.
79.15 (max)	20744.

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
2.27 (min)	0.0793
2.5	0.0908
3.	0.130
3.5	0.193
4.	0.287
5.	0.601
6.	1.16
7.	2.04
8.	3.32
9.	5.06
10.	7.27
13.	16.4
16.	27.4
20.	40.6
25.	62.3
30.	118.
32.71 (max)	186.

RMS % Error	Life Prediction Ratio Summary
8.69	0. .5 .8 1.25 2.

RMS % Error	Life Prediction Ratio Summary
33.04	0. .5 .8 1.25 2.

Figure 8.19.3.1.77

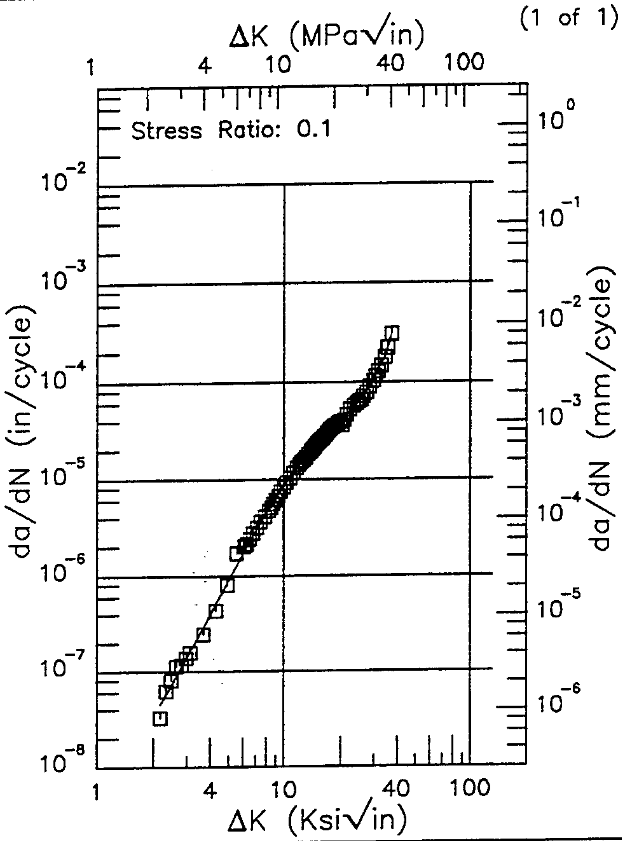
7475

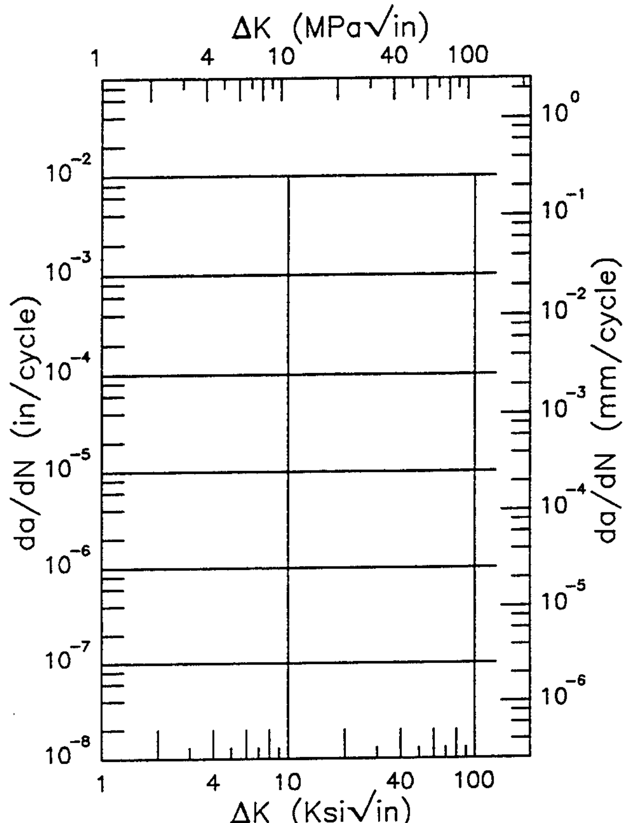
R

Condition/Ht: T761
Form: 0.08 in. Sheet
Specimen Type: CCP (max load specified)
Orientation: L–T
Frequency: 7 Hz
Environment: LAB AIR; RT

Yield Strength: 63.7 ksi
Ult. Strength:
Specimen Thk: 0.074 in.
Specimen Width: 11.02 in.
Ref: DA005

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
2.17 (min)	0.0451
2.5	0.0734
3.	0.140
3.5	0.244
4.	0.398
5.	0.895
6.	1.71
7.	2.89
8.	4.47
9.	6.44
10.	8.75
16.	26.4
20.	39.9
30.	105.
37.09 (max)	293.

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error
7.43

Life Prediction Ratio Summary
0. .5 .8 1.25 2.

RMS % Error

Life Prediction Ratio Summary
0. .5 .8 1.25 2.

Figure 8.19.3.1.78

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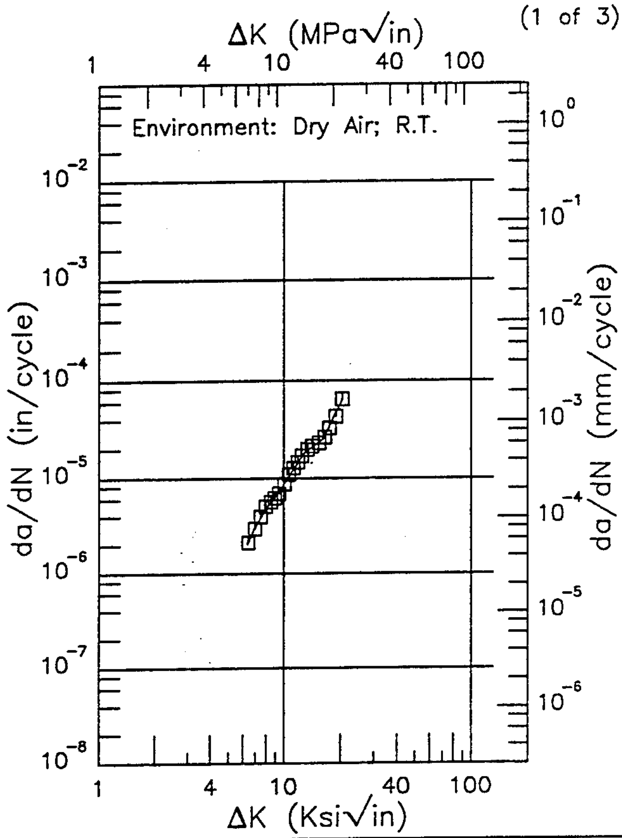
7475

E

Condition/Ht: T761	Yield Strength: 66.8 ksi
Form: 0.13 in. Sheet	Ult. Strength: 74.8 ksi
Specimen Type: CCP (max load specified)	Specimen Thk: 0.126 in.
Orientation: L-T	Specimen Width: 4 in.
Stress Ratio: 0.33	Ref: 86842
Frequency: 13.3 Hz	

(1 of 3)



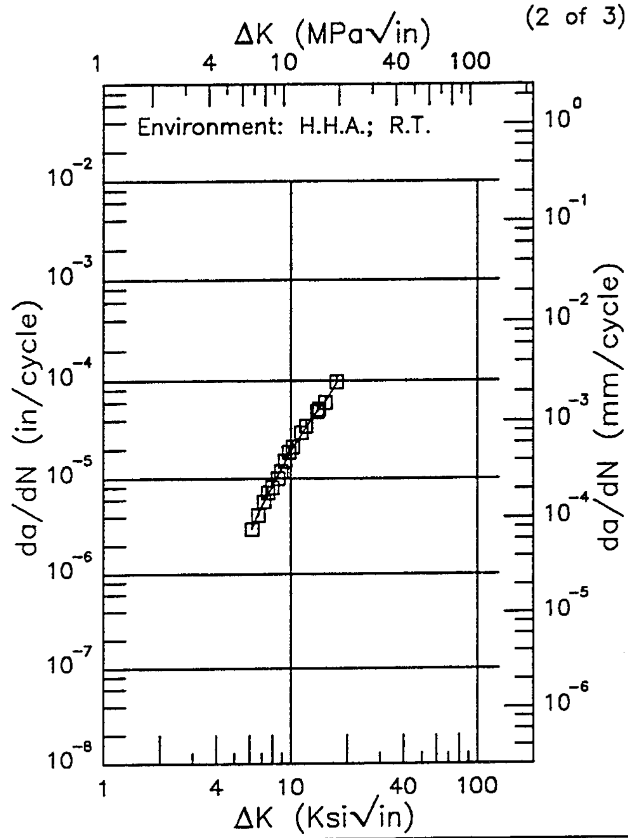
ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
6.38 (min)	2.06
7.	3.10
8.	4.74
9.	6.46
10.	8.66
13.	18.9
16.	25.0
20.	59.2
20.38 (max)	64.0

RMS % Error: 3.98

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

(2 of 3)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
6.18 (min)	2.98
7.	5.12
8.	8.45
9.	12.9
10.	19.2
13.	42.5
16.	68.7
17.61 (max)	95.5

RMS % Error: 3.67

Life Prediction Ratio Summary

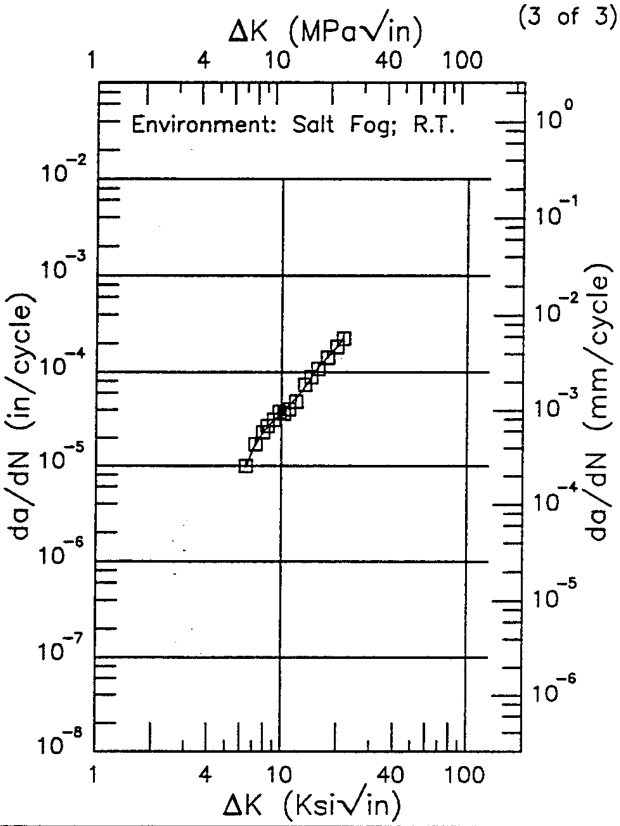
0. .5 .8 1.25 2.

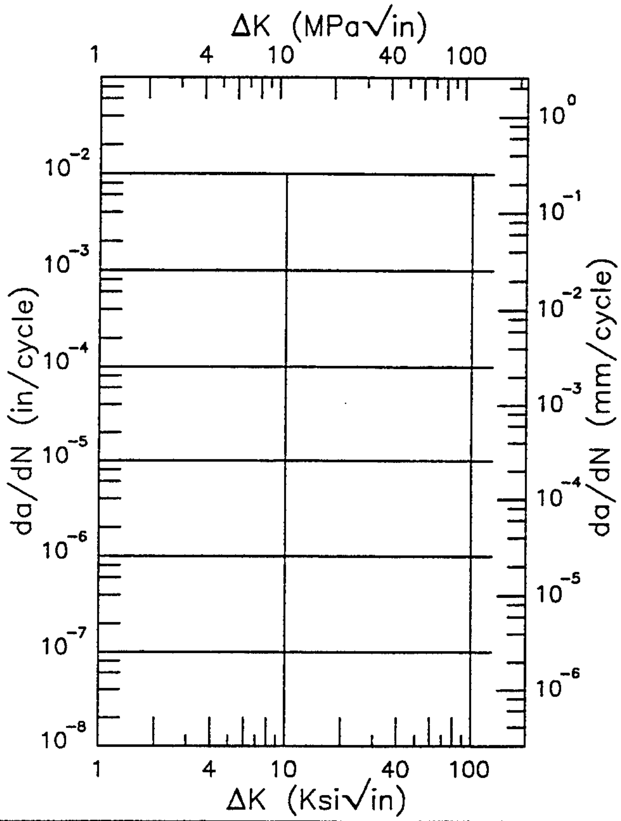
Figure 8.19.3.1.79

Condition/Ht: T761
Form: 0.13 in. Sheet
Specimen Type: CCP (max load specified)
Orientation: L–T
Stress Ratio: 0.33
Frequency: 13.3 Hz

Yield Strength: 66.8 ksi
Ult. Strength: 74.8 ksi
Specimen Thk: 0.126 in.
Specimen Width: 4 in.
Ref: 86842

(3 of 3)





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
6.42 (min)	9.76
7.	15.2
8.	23.7
9.	30.2
10.	35.8
13.	64.1
16.	116.
20.	185.
21.42 (max)	225.

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error	Life Prediction Ratio Summary
4.78	0. .5 .8 1.25 2.

RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

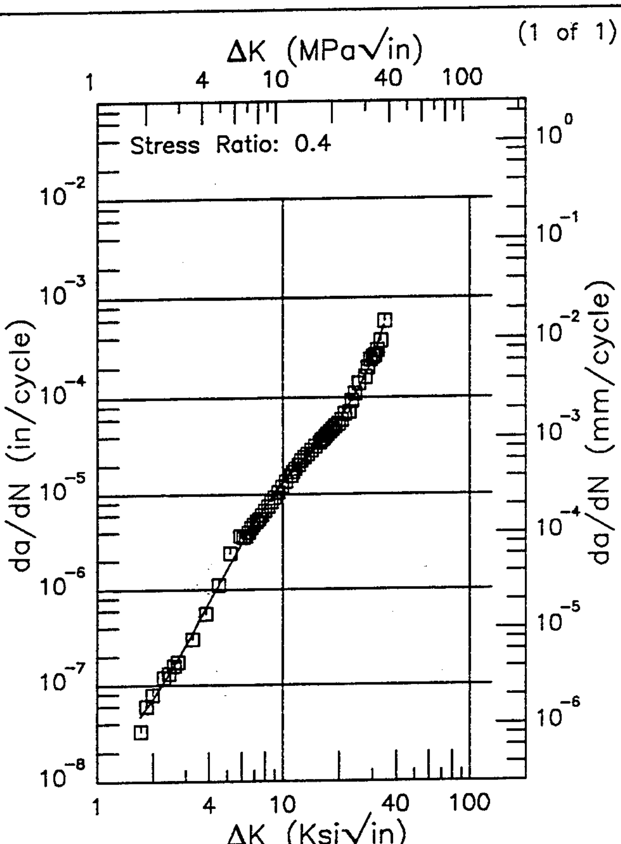
Figure 8.19.3.1.79 (Concluded)

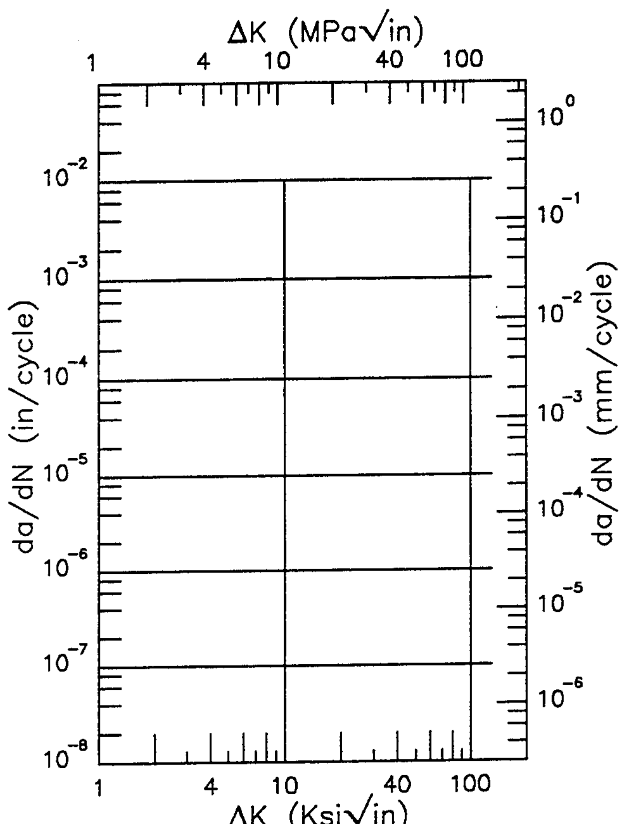
7475

R

Condition/Ht: T761
Form: 0.08 in. Sheet
Specimen Type: CCP (max load specified)
Orientation: L–T
Frequency: 5 Hz
Environment: LAB AIR; RT

Yield Strength: 63.7 ksi
Ult. Strength:
Specimen Thk: 0.076 in.
Specimen Width: 11.048 in.
Ref: DA005





ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)
1.71 (min)	0.0467
2.	0.0707
2.5	0.140
3.	0.259
3.5	0.447
4.	0.722
5.	1.61
6.	3.01
7.	4.97
8.	7.42
9.	10.3
10.	13.3
16.	34.6
20.	58.9
30.	241.
34.70 (max)	531.

ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)

RMS % Error
9.58

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

RMS % Error

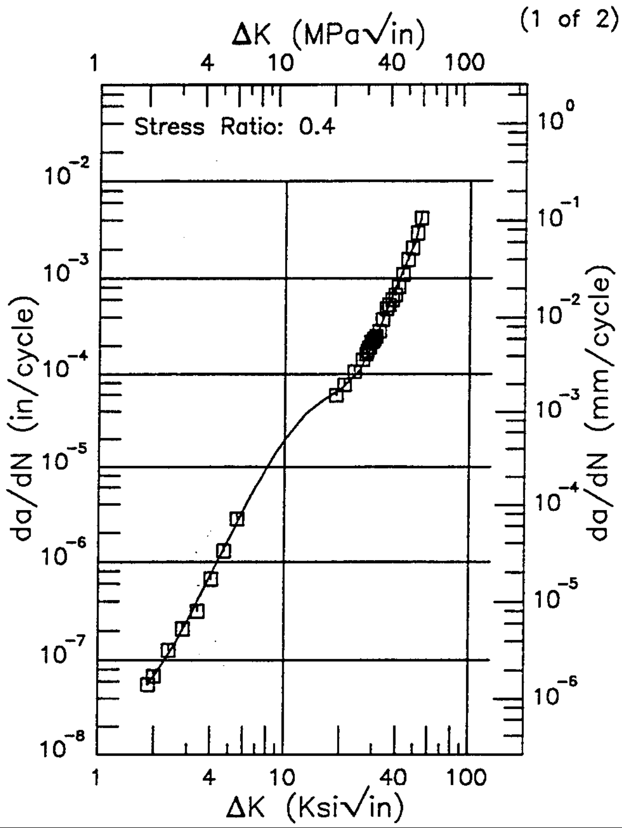
Life Prediction Ratio Summary

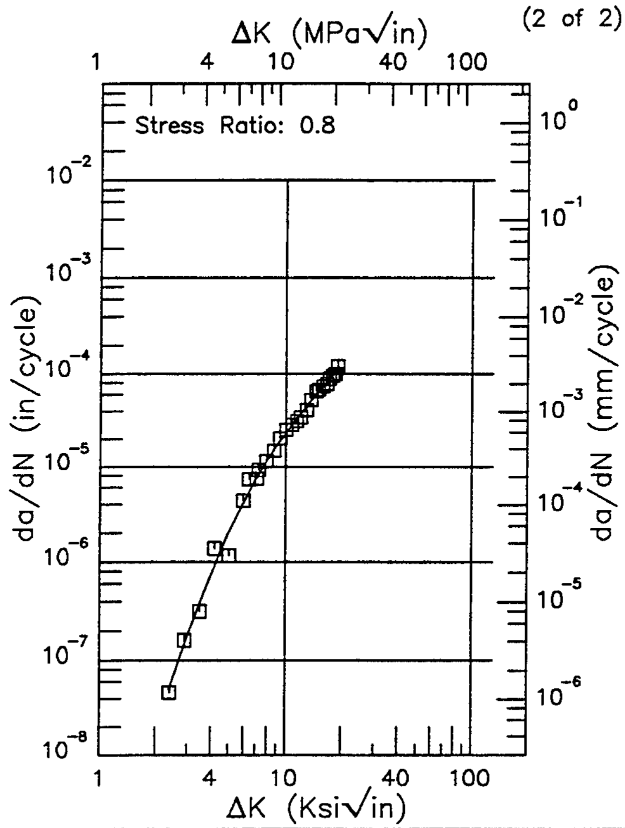
0. .5 .8 1.25 2.

Figure 8.19.3.1.80

Condition/Ht: T761
Form: 0.08 in. Sheet
Specimen Type: CCP (max load specified)
Orientation: L-T
Frequency: 3 – 15 Hz
Environment: LAB AIR; RT

Yield Strength: 63.7 ksi
Ult. Strength: 73.4 ksi
Specimen Thk: 0.072 in.
Specimen Width: 12 – 12.01 in.
Ref: DA004



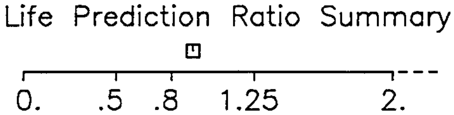


ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
1.85 (min)	0.0560
2.	0.0685
3.	0.250
4.	0.733
5.	1.74
6.	3.50
7.	6.17
8.	9.81
9.	14.4
10.	19.6
16.	52.3
20.	69.1
30.	216.
40.	877.
53.82 (max)	4347.

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
2.39 (min)	0.0507
2.5	0.0650
3.	0.175
3.5	0.386
4.	0.738
5.	2.02
6.	4.24
7.	7.52
8.	11.8
9.	17.0
10.	23.1
13.	45.5
16.	74.0
18.96 (max)	110.

RMS % Error
8.53

Life Prediction Ratio Summary



RMS % Error
16.72

Life Prediction Ratio Summary

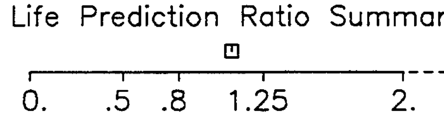


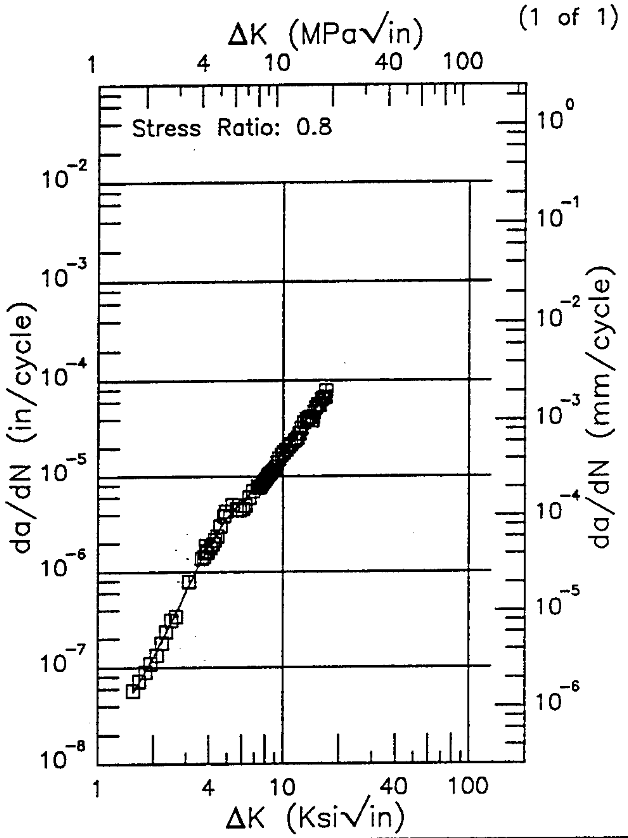
Figure 8.19.3.1.81

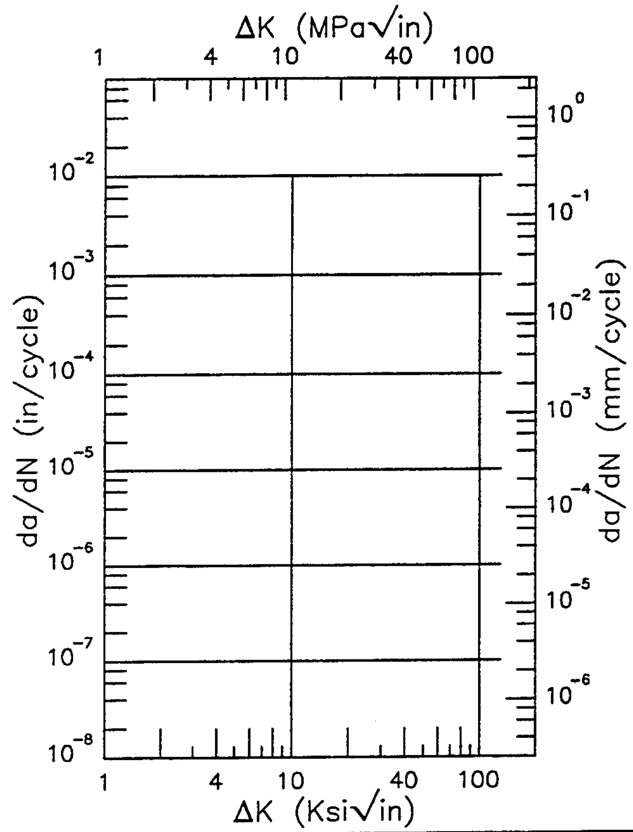
R 7475

Condition/Ht: T761
Form: 0.08 in. Sheet
Specimen Type: CCP (max load specified)
Orientation: L–T
Frequency: 10 Hz
Environment: LAB AIR; RT

Yield Strength: 62.2 ksi
Ult. Strength:
Specimen Thk: 0.073 in.
Specimen Width: 11.09 in.
Ref: DA005

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
1.55 (min)	0.0553
1.6	0.0607
2.	0.126
2.5	0.296
3.	0.615
3.5	1.13
4.	1.84
5.	3.67
6.	5.48
7.	7.12
8.	9.03
9.	11.8
10.	16.0
13.	36.3
16.	59.8
17.01 (max)	78.4

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error	Life Prediction Ratio Summary
7.83	0. .5 .8 1.25 2.

RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

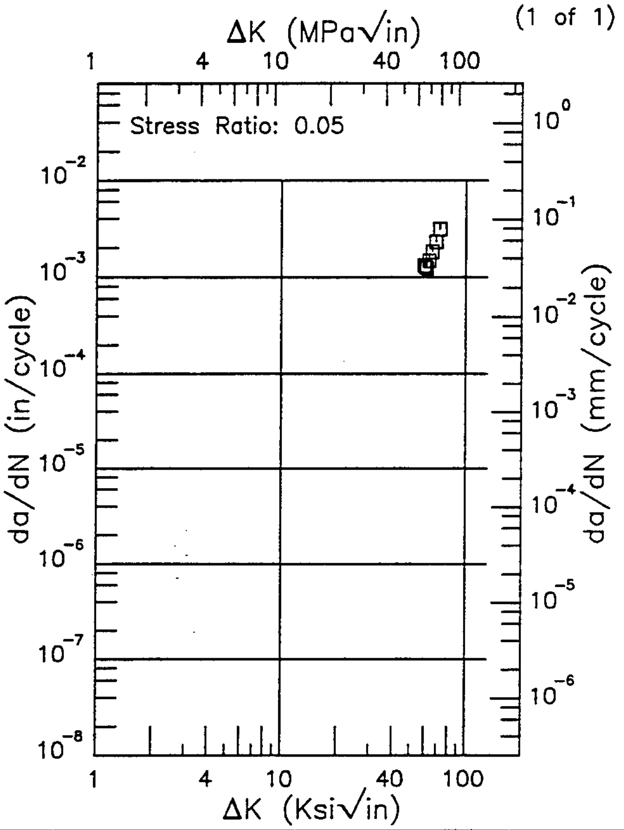
Figure 8.19.3.1.82

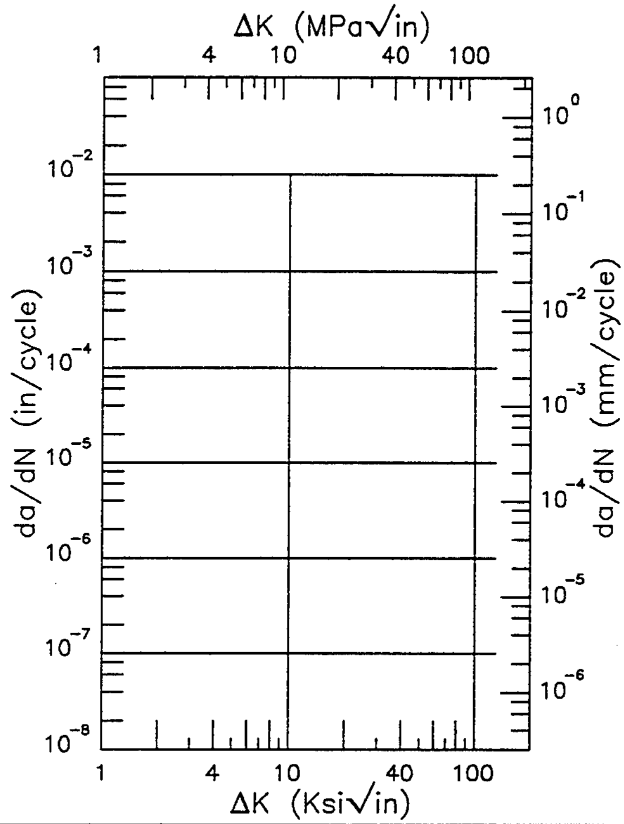
7475 R

Condition/Ht: T761
Form: 0.11 in. Sheet
Specimen Type: CCP (max load specified)
Orientation: T–L
Frequency: 2 Hz
Environment: H.H.A.; RT

Yield Strength: 65.3 ksi
Ult. Strength: 74.5 ksi
Specimen Thk: 0.04 in.
Specimen Width: 12 in.
Ref: 86212

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)	ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)

RMS % Error	Life Prediction Ratio Summary	RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.		0. .5 .8 1.25 2.

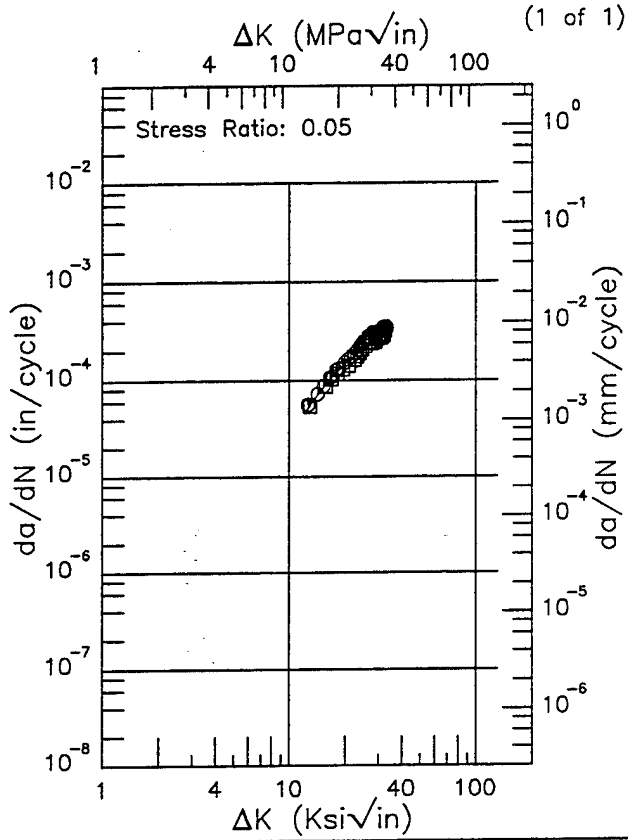
Figure 8.19.3.1.83

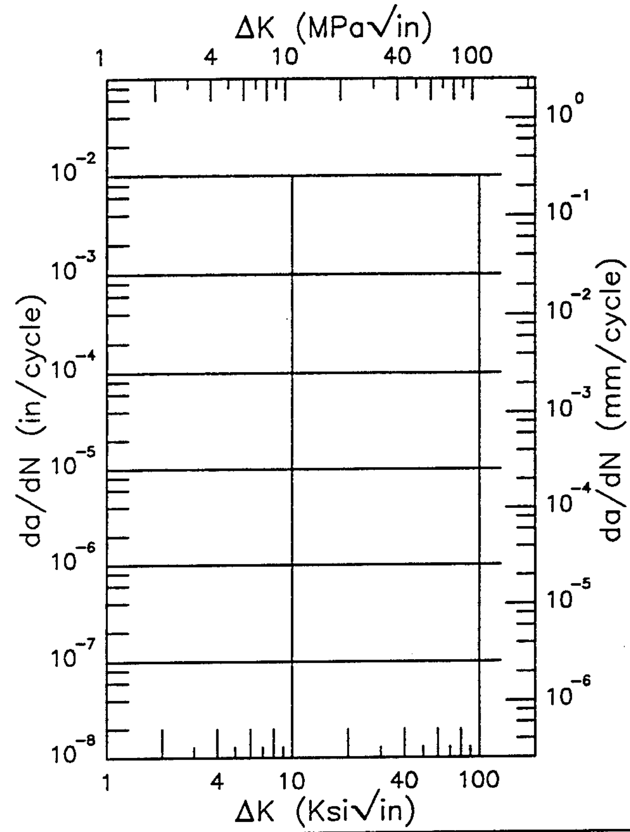
R 7475

Condition/Ht: T761
Form: 0.11 in. Sheet
Specimen Type: CCP (max load specified)
Orientation: T-L
Frequency: 2 Hz
Environment: 3.5% NACL; RT

Yield Strength: 59.8 – 65.3 ksi
Ult. Strength: 68.7 – 74.5 ksi
Specimen Thk: 0.114 – 0.115 in.
Specimen Width: 36.07 – 36.08 in.
Ref: 86212

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)
12.56 (min)	50.6
13.	56.6
16.	95.6
20.	147.
25.	226.
30.	290.
33.19 (max)	329.

ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)

RMS % Error	Life Prediction Ratio Summary
7.92	0. .5 .8 1.25 2.

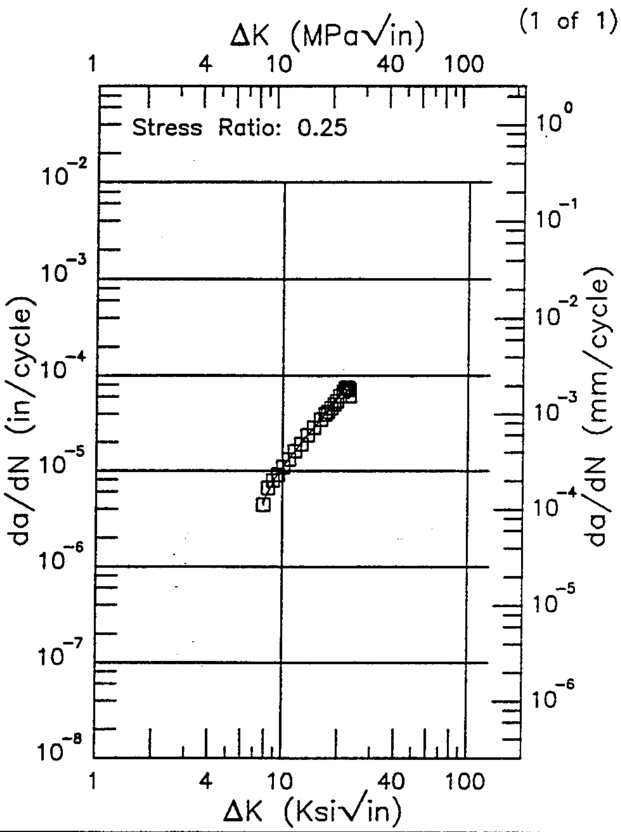
RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

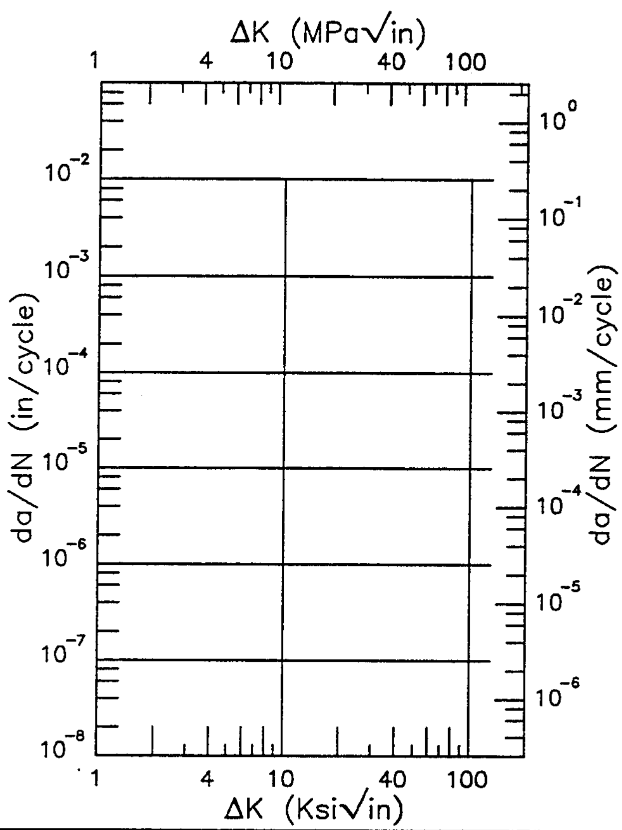
Figure 8.19.3.1.84

Condition/Ht: T761
Form: 0.11 in. Sheet
Specimen Type: CCP (max load specified)
Orientation: T–L
Frequency: 2 Hz
Environment: H.H.A.; RT

Yield Strength: 65.3 ksi
Ult. Strength: 74.5 ksi
Specimen Thk: 0.115 in.
Specimen Width: 24.03 in.
Ref: 86212

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
7.84 (min)	4.82
8.	5.28
9.	8.17
10.	11.0
13.	21.2
16.	34.9
20.	59.9
22.71 (max)	71.1

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error	Life Prediction Ratio Summary
5.57	0. .5 .8 1.25 2.

RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

Figure 8.19.3.1.85

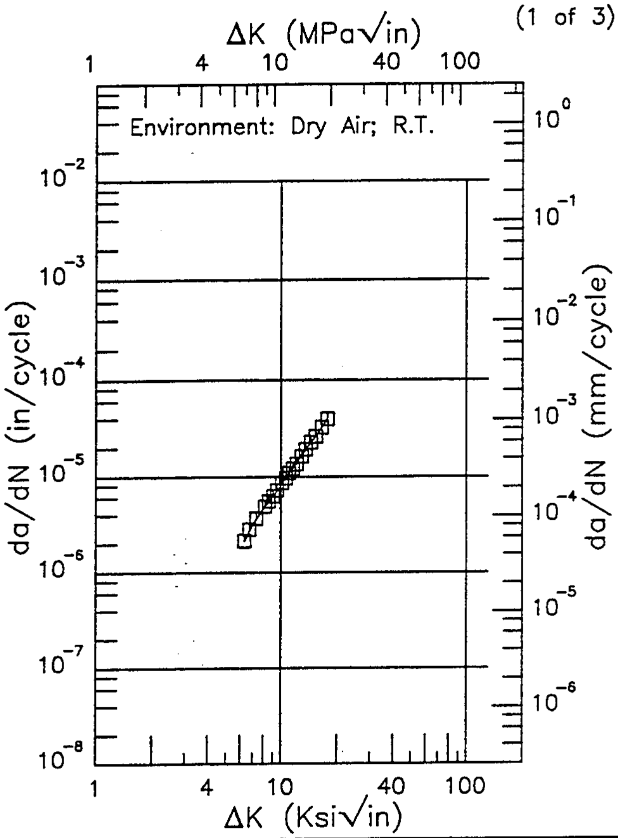
E

7475

Condition/Ht: T761
Form: 0.04 in. Sheet
Specimen Type: CCP (max load specified)
Orientation: T–L
Stress Ratio: 0.33
Frequency: 13.3 Hz

Yield Strength: 71.1 ksi
Ult. Strength: 78.9 ksi
Specimen Thk: 0.042 in.
Specimen Width: 4 in.
Ref: 86842

(1 of 3)



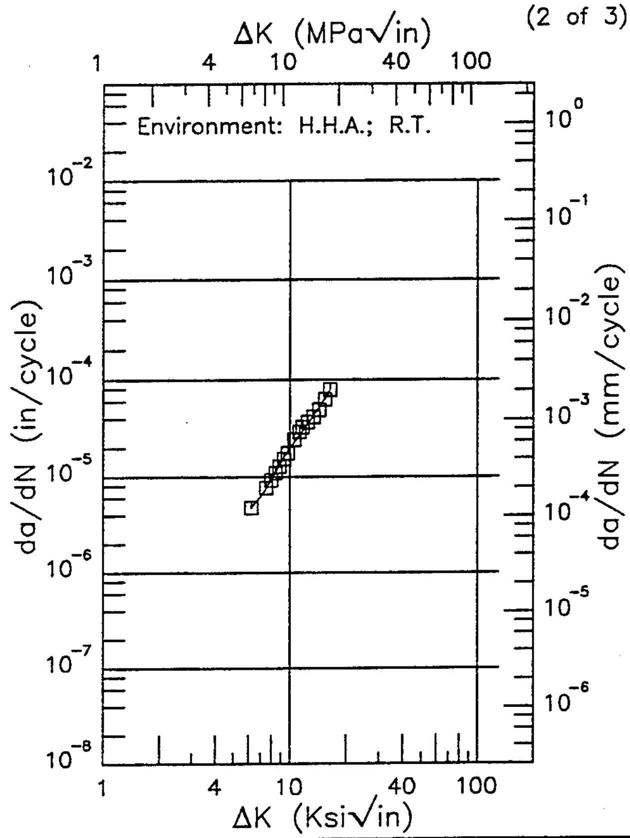
ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
6.32 (min)	2.17
7.	3.16
8.	4.66
9.	6.27
10.	8.21
13.	16.9
16.	29.9
17.65 (max)	39.3

RMS % Error 1.29

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

(2 of 3)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
6.20 (min)	4.79
7.	6.22
8.	9.32
9.	14.0
10.	19.9
13.	39.5
16.	71.1
16.34 (max)	77.4

RMS % Error 4.09

Life Prediction Ratio Summary

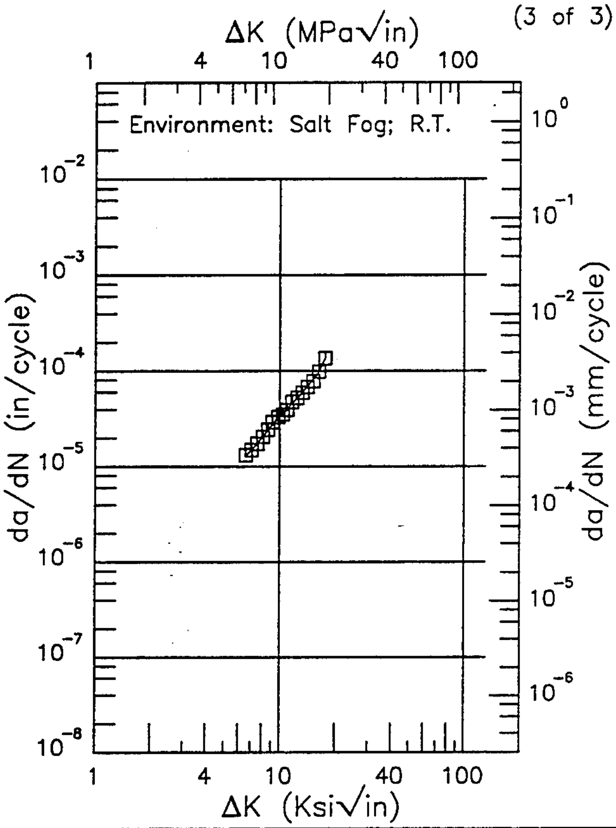
0. .5 .8 1.25 2.

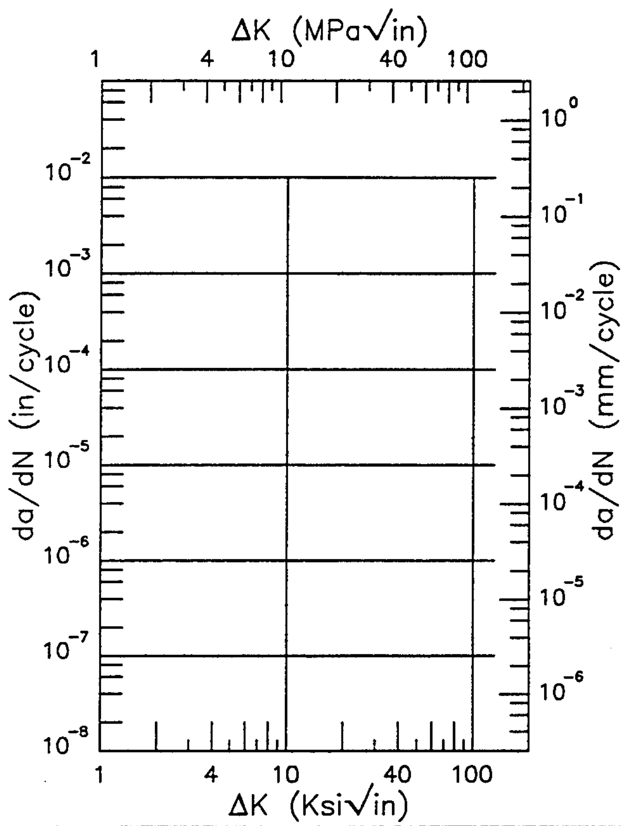
Figure 8.19.3.1.86

Condition/Ht: T761
Form: 0.04 in. Sheet
Specimen Type: CCP (max load specified)
Orientation: T-L
Stress Ratio: 0.33
Frequency: 13.3 Hz

Yield Strength: 71.1 ksi
Ult. Strength: 78.9 ksi
Specimen Thk: 0.042 in.
Specimen Width: 4 in.
Ref: 86842

(3 of 3)





ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)
6.53 (min)	12.7
7.	14.6
8.	20.0
9.	26.6
10.	33.9
13.	56.7
16.	93.7
17.48 (max)	134.

ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)

RMS % Error: 2.92

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

RMS % Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

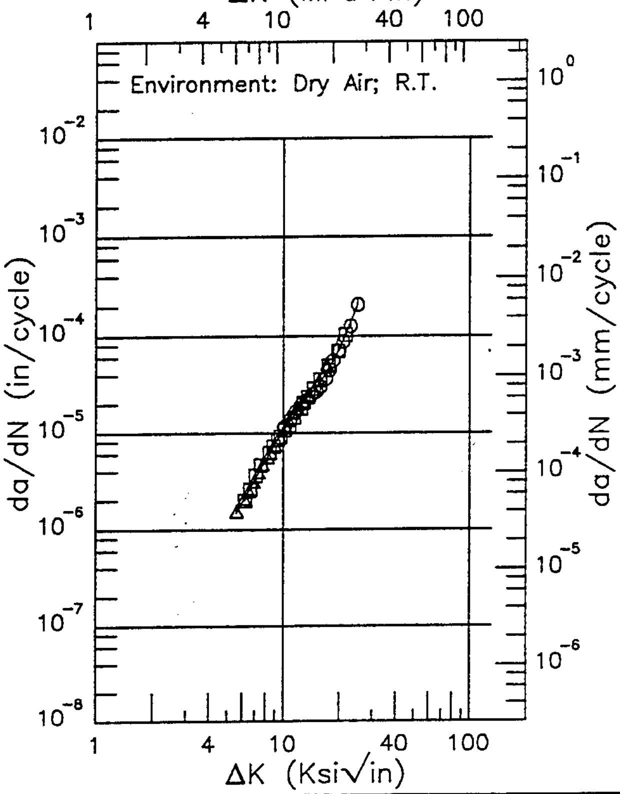
Figure 8.19.3.1.86 (Concluded)

E 7475

Condition/Ht: T761
Form: 0.13 in. Sheet
Specimen Type: CCP (max load specified)
Orientation: T–L
Stress Ratio: 0.33
Frequency: 13.3 Hz

Yield Strength: 65.6 ksi
Ult. Strength: 76 ksi
Specimen Thk: 0.126 in.
Specimen Width: 4 in.
Ref: 86842

(1 of 3)



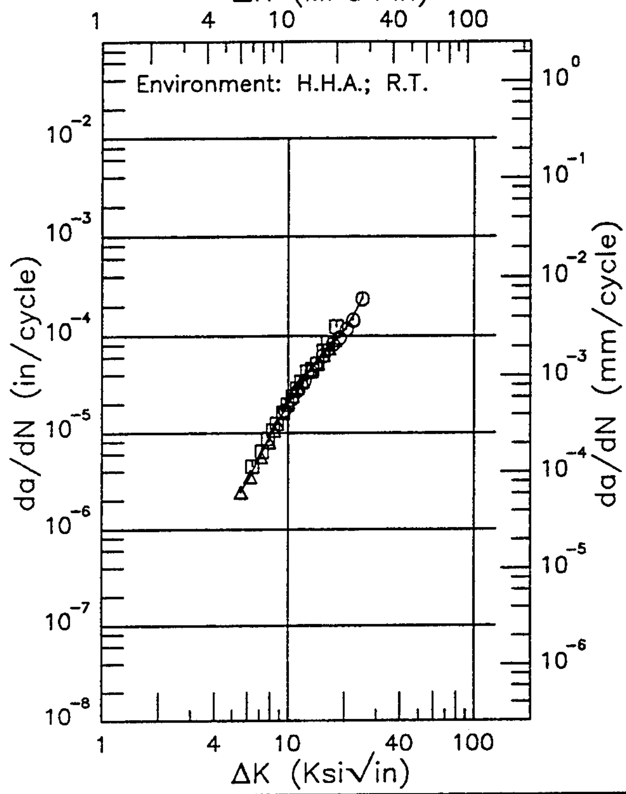
ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)
5.60 (min)	1.50
6.	1.91
7.	3.28
8.	5.19
9.	7.64
10.	10.6
13.	21.3
16.	35.2
20.	73.6
24.97 (max)	202.

RMS % Error 5.68

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

(2 of 3)



ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)
5.54 (min)	2.42
6.	3.18
7.	5.58
8.	9.16
9.	14.0
10.	20.0
13.	42.1
16.	69.7
20.	113.
25.	235.
25.01 (max)	236.

RMS % Error 7.50

Life Prediction Ratio Summary

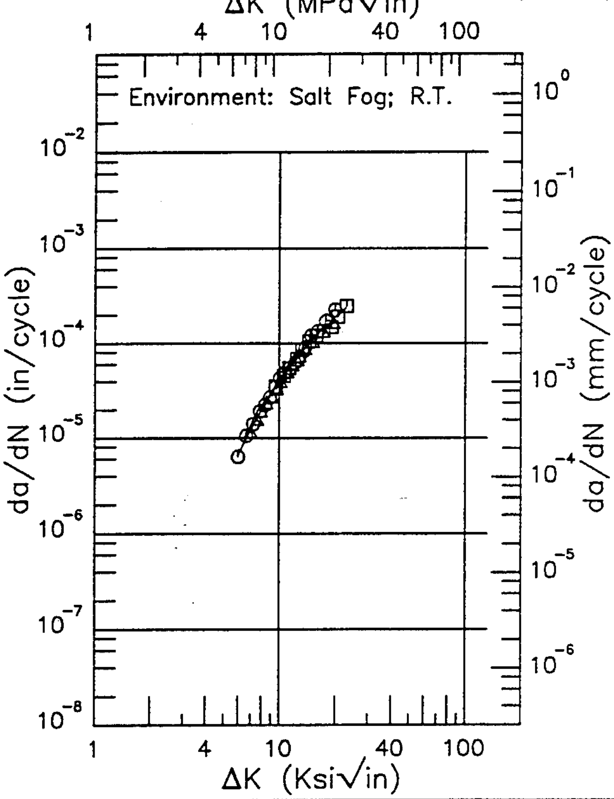
0. .5 .8 1.25 2.

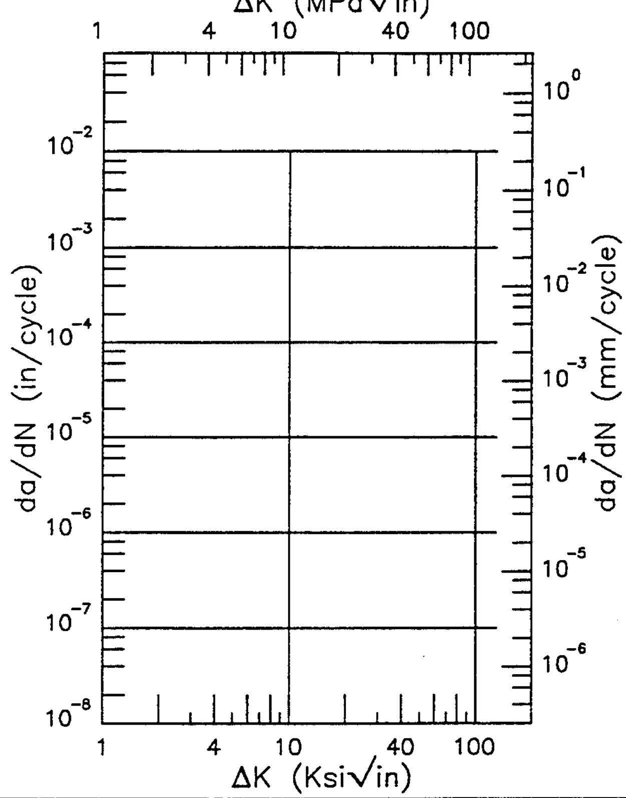
Figure 8.19.3.1.87

Condition/Ht: T761
Form: 0.13 in. Sheet
Specimen Type: CCP (max load specified)
Orientation: T–L
Stress Ratio: 0.33
Frequency: 13.3 Hz

Yield Strength: 65.6 ksi
Ult. Strength: 76 ksi
Specimen Thk: 0.126 in.
Specimen Width: 4 in.
Ref: 86842

(3 of 3)





ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)
5.98 (min)	6.66
6.	6.76
7.	12.2
8.	19.6
9.	28.6
10.	39.3
13.	78.7
16.	125.
20.	191.
22.77 (max)	237.

ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)

RMS % Error	Life Prediction Ratio Summary
6.12	0. .5 .8 1.25 2.

RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

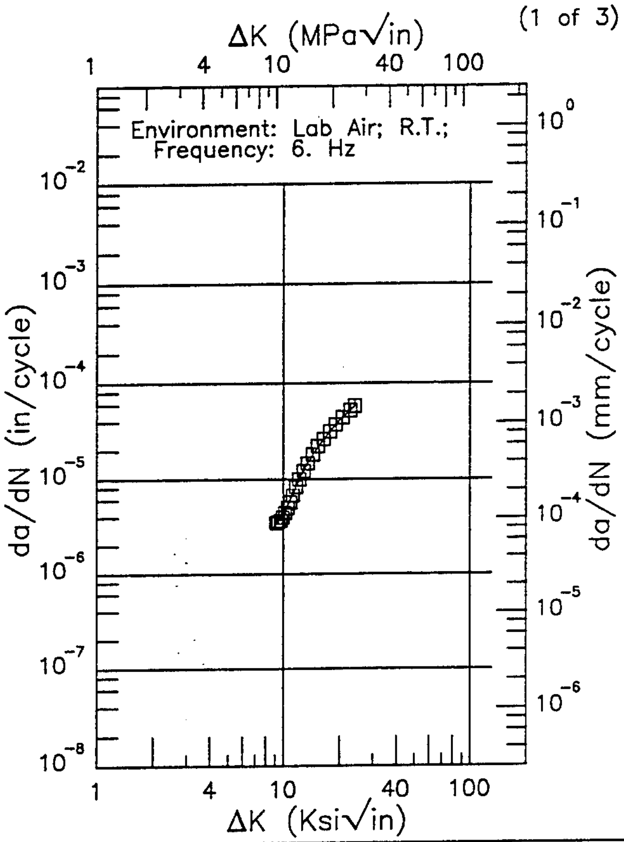
Figure 8.19.3.1.87 (Concluded)

EF 7475

Condition/Ht: T7651
Form: Sheet
Specimen Type: CCP (max stress specified)
Orientation: L–T
Stress Ratio: 0.

Yield Strength: 67.6 ksi
Ult. Strength:
Specimen Thk: 0.188 – 0.193 in.
Specimen Width: 11.995 – 12.007 in.
Ref: DA001

(1 of 3)



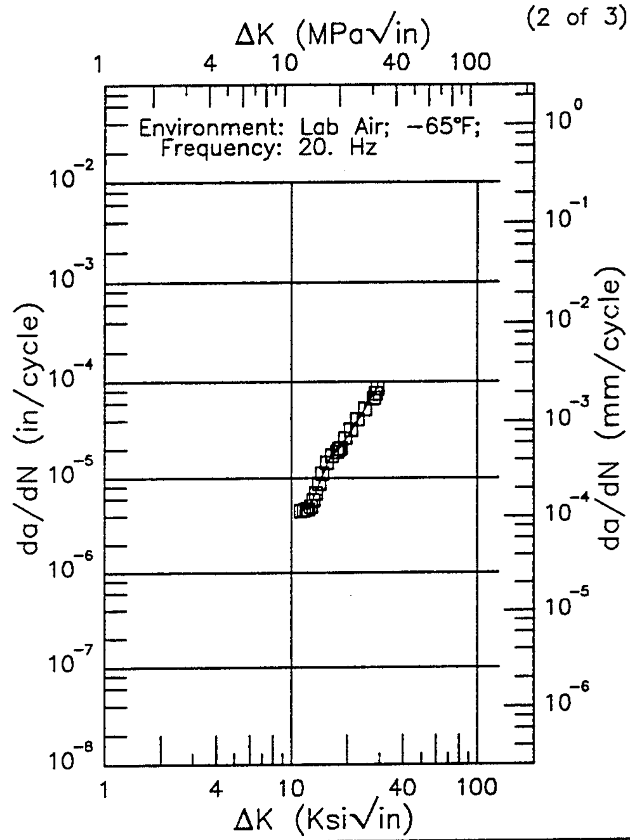
ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
9.10 (min)	3.32
10.	4.20
13.	13.2
16.	24.7
20.	41.5
23.91 (max)	57.7

RMS % Error: 2.12

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

(2 of 3)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
11.25 (min)	4.54
13.	5.72
16.	15.4
20.	26.5
25.	53.4
29.01 (max)	88.4

RMS % Error: 6.10

Life Prediction Ratio Summary

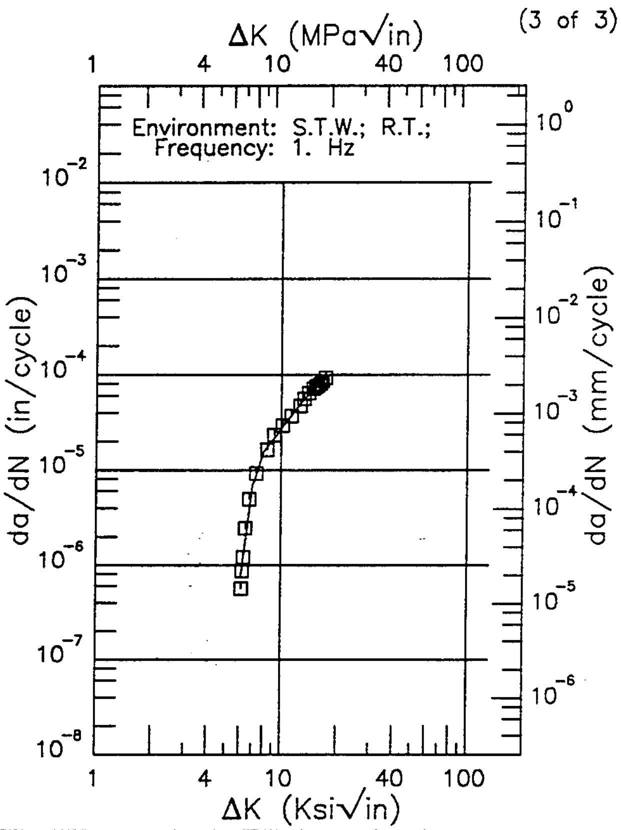
0. .5 .8 1.25 2.

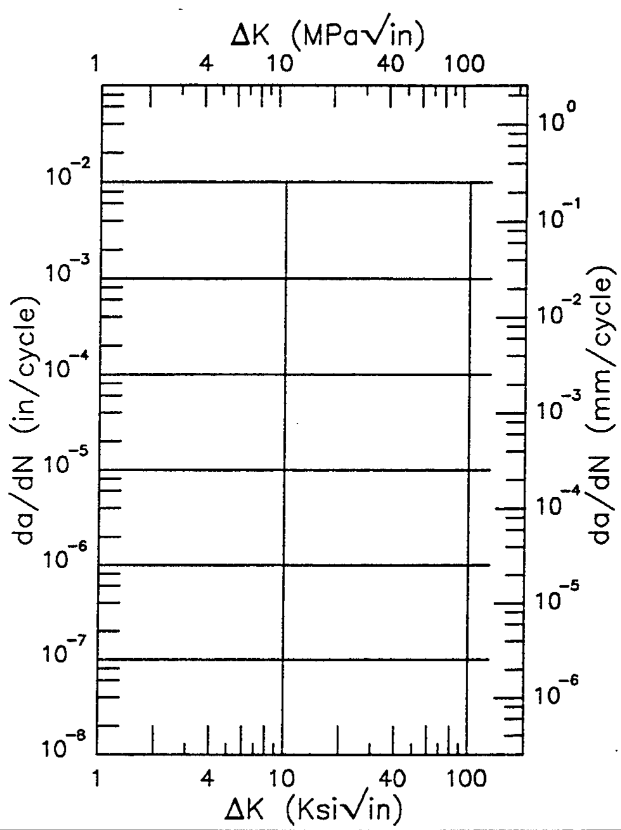
Figure 8.19.3.1.88

Condition/Ht: T7651
Form: Sheet
Specimen Type: CCP (max stress specified)
Orientation: L–T
Stress Ratio: 0.

Yield Strength: 67.6 ksi
Ult. Strength:
Specimen Thk: 0.188–0.193 in.
Specimen Width: 11.995–12.007 in.
Ref: DA001

(3 of 3)





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
6.10 (min)	0.772
7.	6.94
8.	15.5
9.	20.7
10.	27.1
13.	52.6
16.	81.9
17.02 (max)	89.6

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error	Life Prediction Ratio Summary
16.11	0. .5 .8 1.25 2.

RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

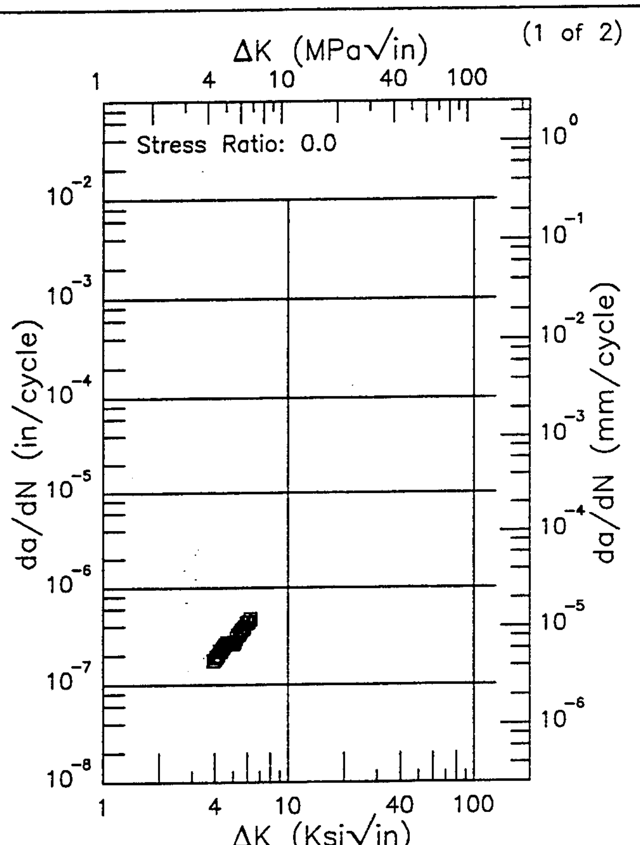
Figure 8.19.3.1.88 (Concluded)

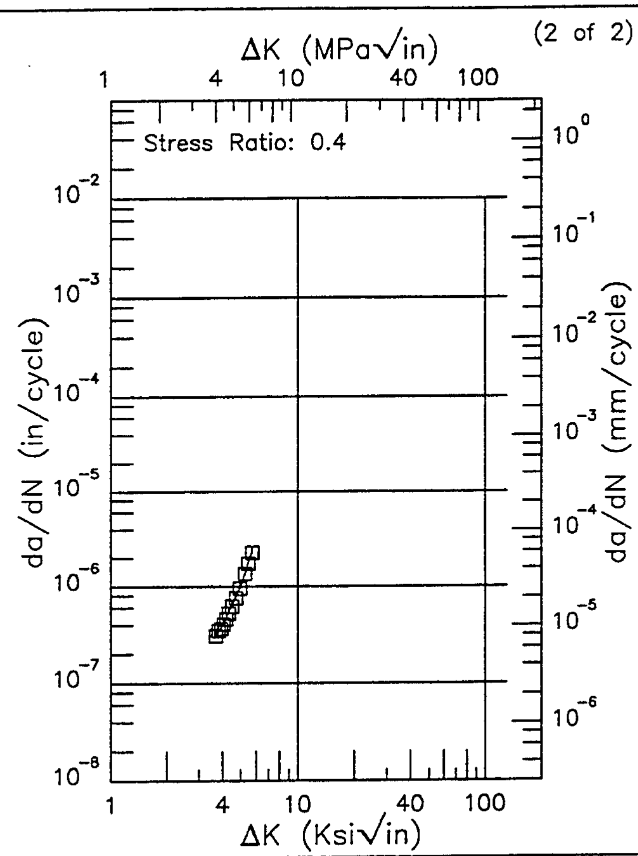
R

7475

Condition/Ht: T7651
Form: Sheet
Specimen Type: CCP (max stress specified)
Orientation: L–T
Frequency: 30 Hz
Environment: LAB AIR; RT

Yield Strength: 67.6 ksi
Ult. Strength:
Specimen Thk: 0.188 in.
Specimen Width: 4 – 4.002 in.
Ref: DA001





ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)
3.89 (min)	0.170
4.	0.186
5.	0.284
6.	0.432
6.19 (max)	0.487

ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)
3.68 (min)	0.307
4.	0.390
5.	1.02
5.71 (max)	2.24

RMS % Error	Life Prediction Ratio Summary
4.52	0. .5 .8 1.25 2.

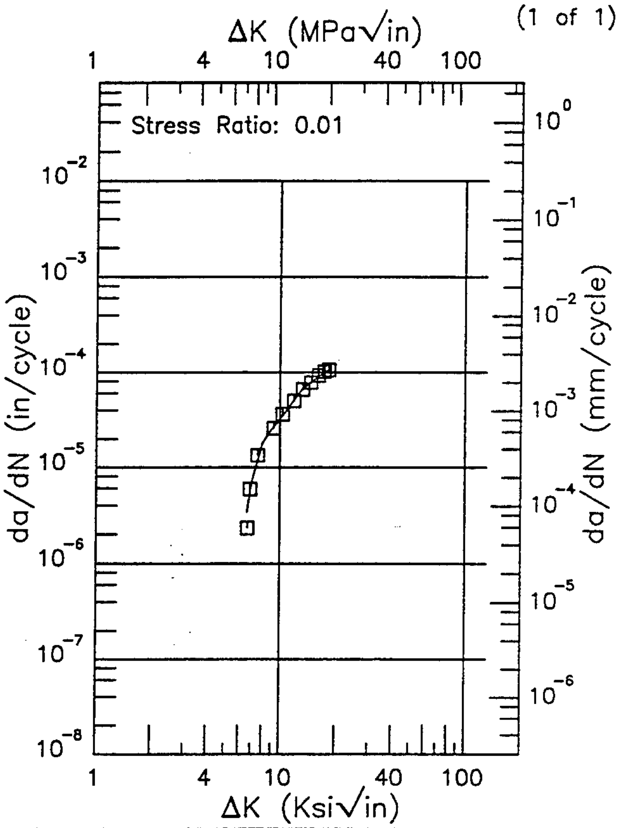
RMS % Error	Life Prediction Ratio Summary
2.36	0. .5 .8 1.25 2.

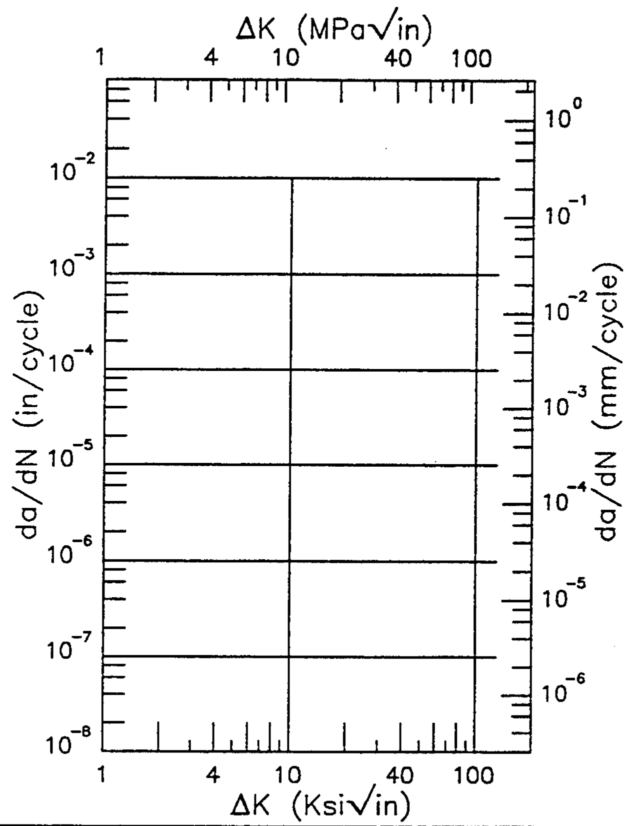
Figure 8.19.3.1.89

Condition/Ht: T7651
Form: Sheet
Specimen Type: CCP (max stress specified)
Orientation: L–T
Frequency: 1 – 5 Hz
Environment: S.T.W.; RT

Yield Strength: 67.6 ksi
Ult. Strength:
Specimen Thk: 0.191 in.
Specimen Width: 12.005 in.
Ref: DA001

(1 of 1)



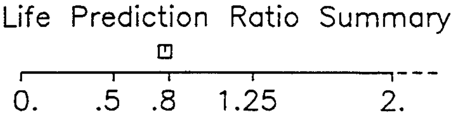


ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
6.64 (min)	3.40
7.	6.78
8.	18.0
9.	25.3
10.	32.0
13.	63.8
16.	90.1
18.16 (max)	105.

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error
11.57

Life Prediction Ratio Summary



RMS % Error

Life Prediction Ratio Summary

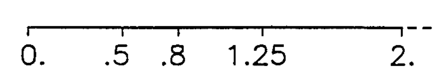


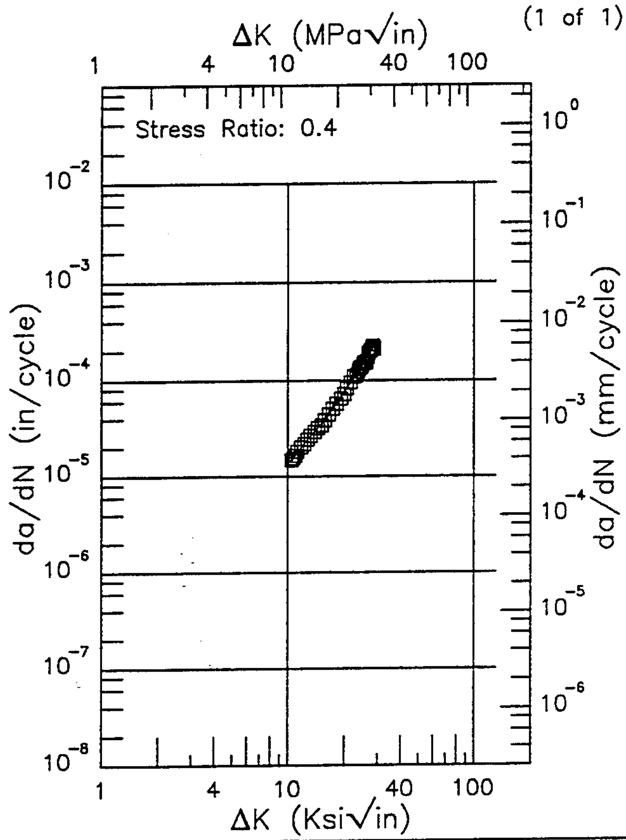
Figure 8.19.3.1.90

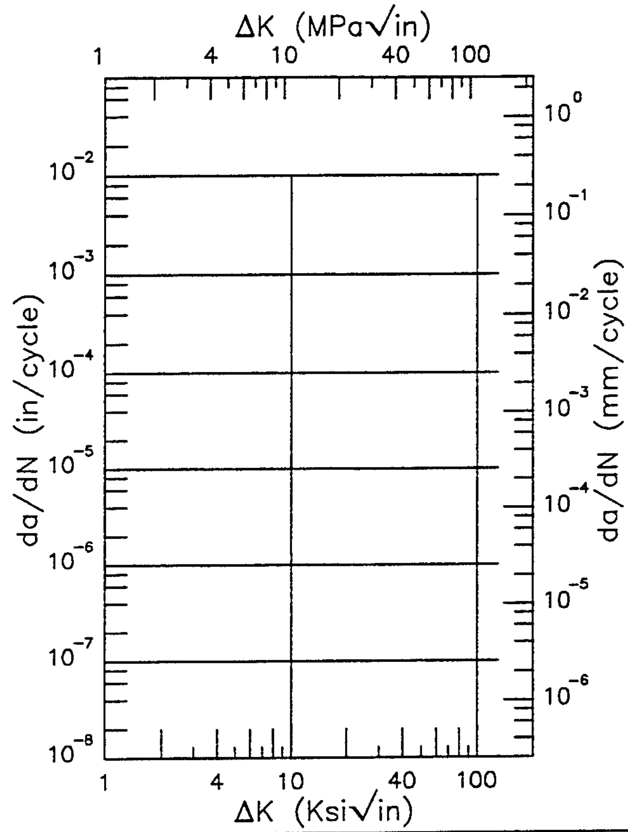
R — 7475

Condition/Ht: T7651
Form: Sheet
Specimen Type: CCP (max stress specified)
Orientation: L–T
Frequency:
Environment: LAB AIR; RT

Yield Strength: 67.6 ksi
Ult. Strength:
Specimen Thk: 0.187 in.
Specimen Width: 12.004 in.
Ref: DA001

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)
10.40 (min)	14.5
13.	25.3
16.	40.5
20.	76.2
25.	146.
28.77 (max)	232.

ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)

RMS % Error	Life Prediction Ratio Summary
2.96	0. .5 .8 1.25 2.

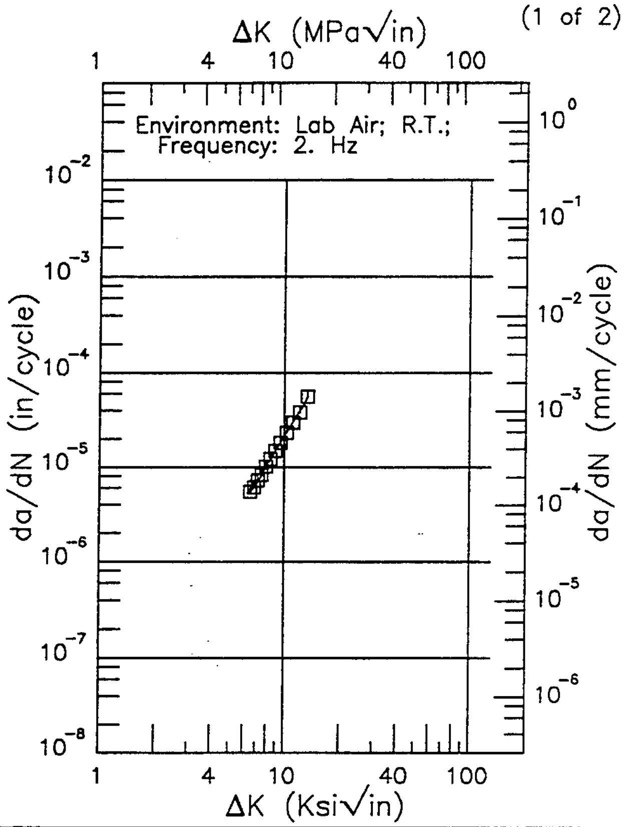
RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

Figure 8.19.3.1.91

Condition/Ht: T7651
Form: Sheet
Specimen Type: CCP (max stress specified)
Orientation: L–T
Stress Ratio: 0.8

Yield Strength: 67.6 ksi
Ult. Strength:
Specimen Thk: 0.188–0.19 in.
Specimen Width: 12.002–12.004 in.
Ref: DA001

(1 of 2)



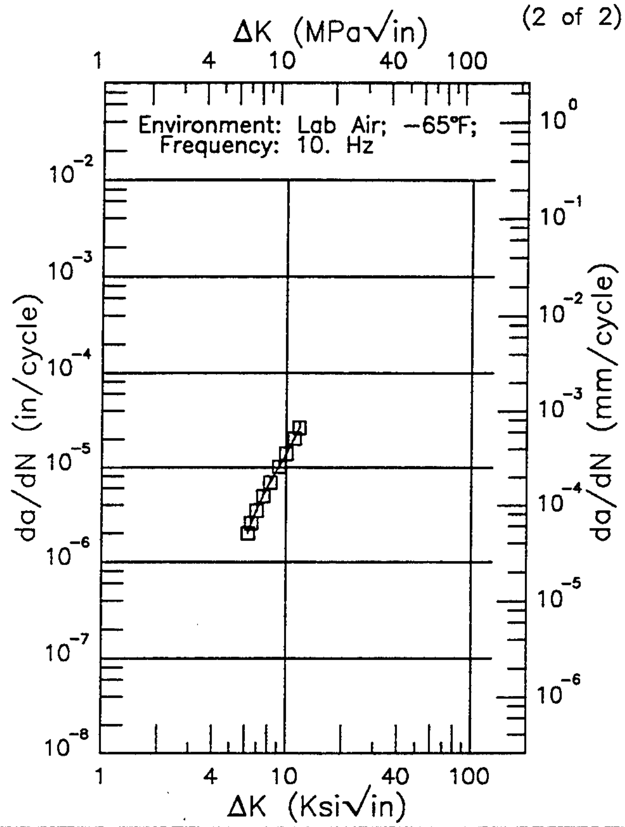
ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
6.52 (min)	5.39
7.	6.64
8.	10.4
9.	15.4
10.	21.5
13.	48.6
13.30 (max)	55.1

RMS % Error: 1.28

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

(2 of 2)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
6.25 (min)	2.03
7.	3.63
8.	6.28
9.	9.57
10.	13.9
11.72 (max)	26.0

RMS % Error: 1.80

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

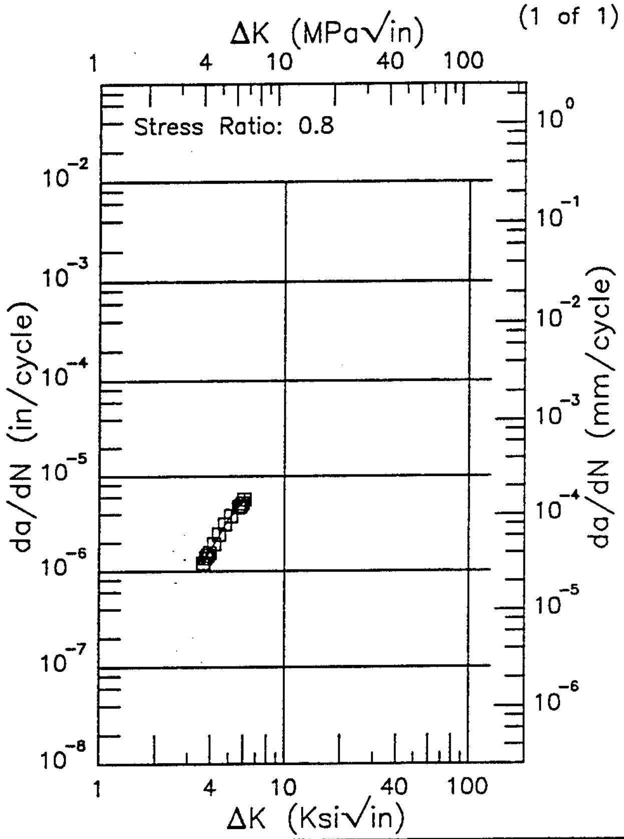
Figure 8.19.3.1.92

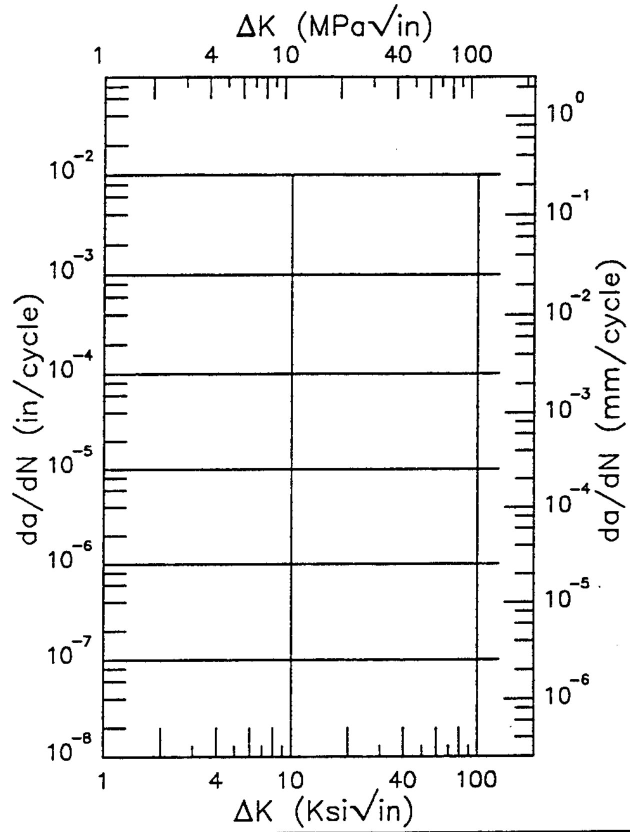
R 7475

Condition/Ht: T7651
Form: Sheet
Specimen Type: CCP (max stress specified)
Orientation: L–T
Frequency: 5 – 10 Hz
Environment: LAB AIR; RT

Yield Strength: 67.6 ksi
Ult. Strength:
Specimen Thk: 0.19 in.
Specimen Width: 4.004 in.
Ref: DA001

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
3.62 (min)	1.19
4.	1.66
5.	3.51
6.	5.38
6.07 (max)	5.56

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error	Life Prediction Ratio Summary
1.73	0. .5 .8 1.25 2.

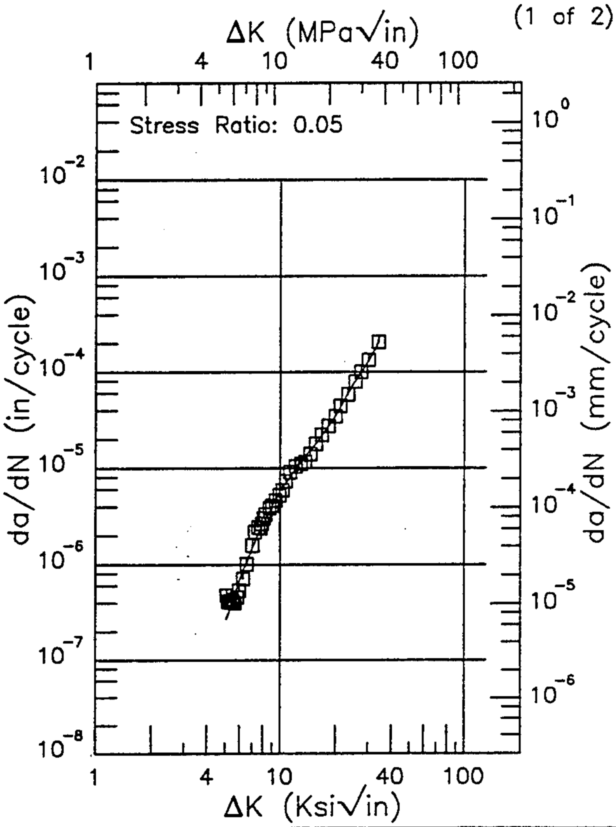
RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

Figure 8.19.3.1.93

Condition/Ht: T7651
Form: 0.75 in. Plate
Specimen Type: CT
Orientation: L–T
Frequency: 1 Hz
Environment: DIST WATER; RT

Yield Strength: 67.7 – 69.3 ksi
Ult. Strength:
Specimen Thk: 0.248 in.
Specimen Width: 2.002 – 2.003 in.
Ref: DA005

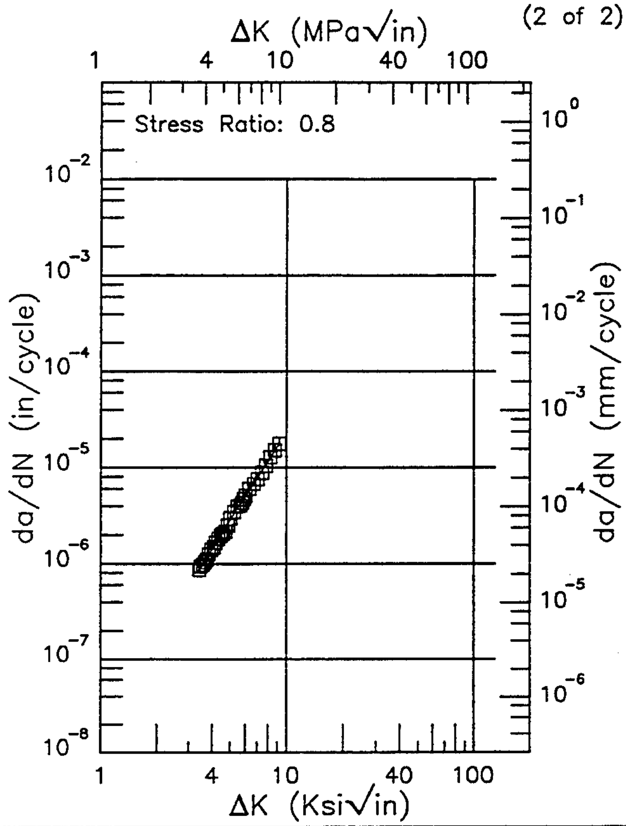
(1 of 2)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
5.10 (min)	0.271
6.	0.682
7.	1.46
8.	2.60
9.	4.07
10.	5.82
13.	12.0
16.	19.1
20.	34.9
25.	76.3
30.	129.
34.13 (max)	205.

RMS % Error	Life Prediction Ratio Summary
17.61	0. .5 .8 1.25 2.

(2 of 2)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
3.41 (min)	0.866
3.5	0.933
4.	1.40
5.	2.86
6.	5.04
7.	7.65
8.	11.5
9.	16.6
9.17 (max)	17.3

RMS % Error	Life Prediction Ratio Summary
2.94	0. .5 .8 1.25 2.

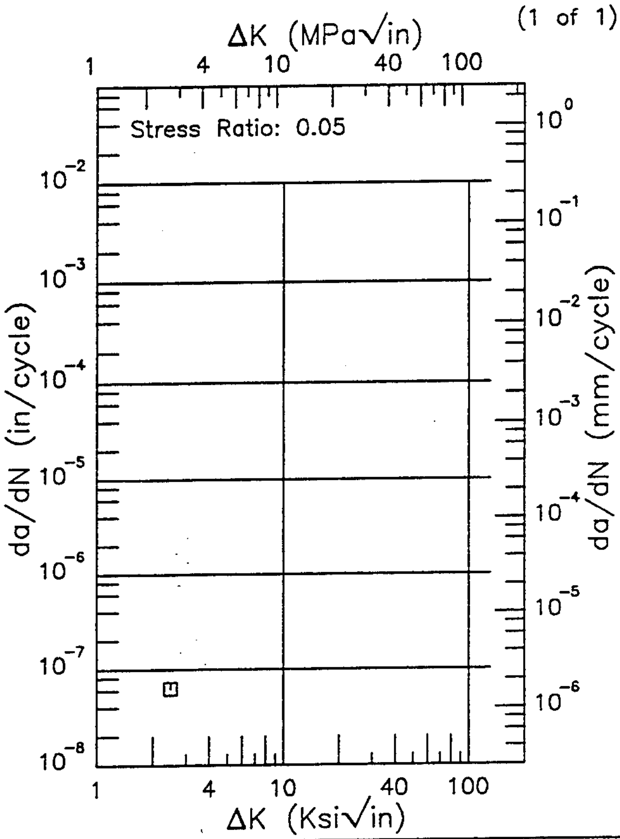
Figure 8.19.3.1.94

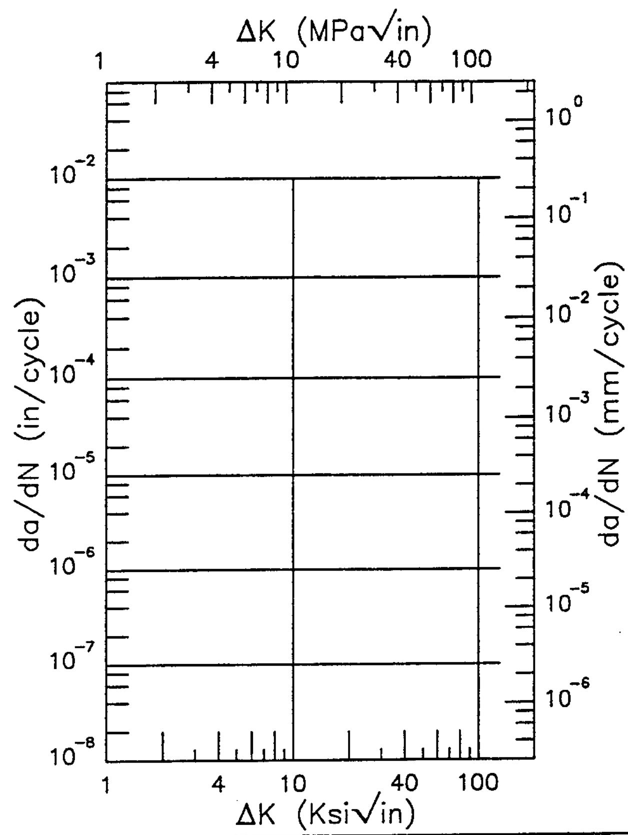
R 7475

Condition/Ht: T7651
Form: 0.75 in. Plate
Specimen Type: CT
Orientation: L-T
Frequency: 5 Hz
Environment: DIST WATER; RT

Yield Strength: 69.3 ksi
Ult. Strength:
Specimen Thk: 0.248 in.
Specimen Width: 2.002 in.
Ref: DA005

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

RMS % Error

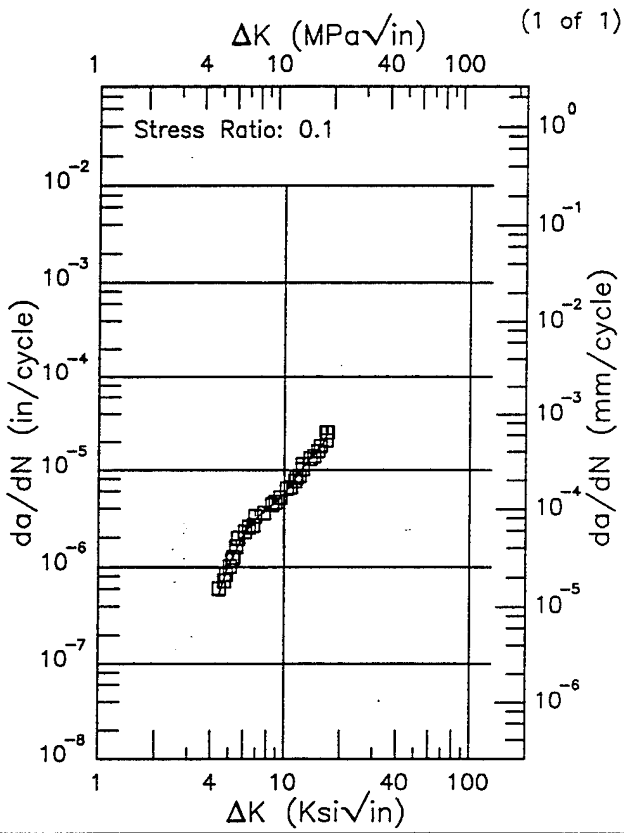
Life Prediction Ratio Summary

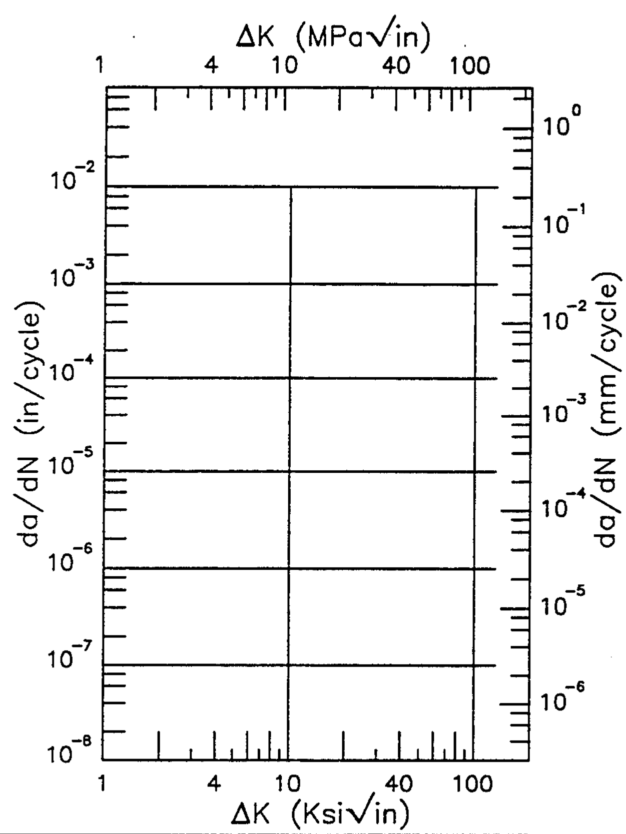
0. .5 .8 1.25 2.

Figure 8.19.3.1.95

Condition/Ht: T7651
Form: 1 in. Plate
Specimen Type: CT
Orientation: L–T
Frequency: 20 Hz
Environment: DRY AIR; RT

Yield Strength:
Ult. Strength:
Specimen Thk:
Specimen Width:
Ref: 91332





ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)
4.44 (min)	0.529
5.	1.04
6.	2.13
7.	3.10
8.	3.89
9.	4.66
10.	5.63
13.	11.6
16.	18.5
16.94 (max)	24.0

ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)

RMS % Error	Life Prediction Ratio Summary
6.56	0. .5 .8 1.25 2.

RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

Figure 8.19.3.1.96

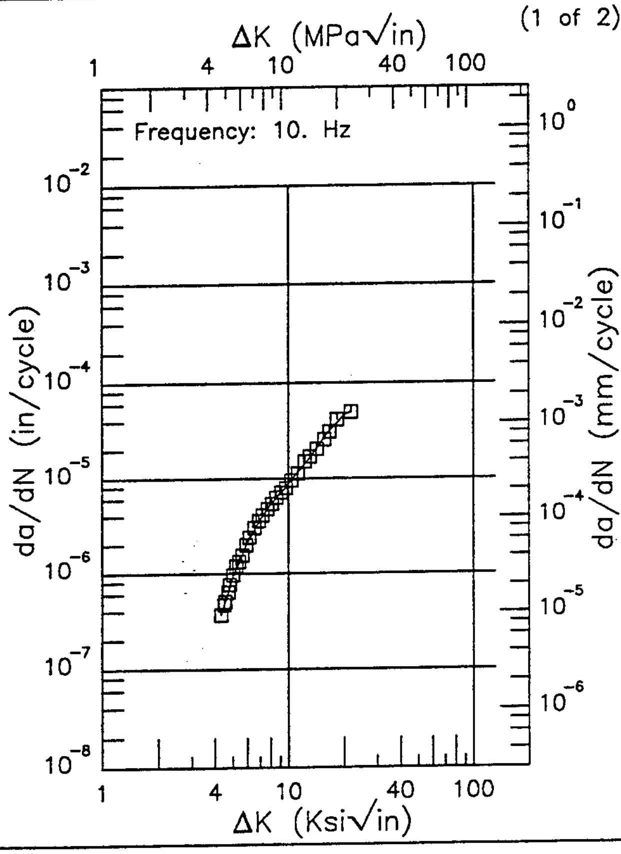
7475

F

Condition/Ht: T7651
Form: 0.75 in. Plate
Specimen Type: CT
Orientation: L–T
Stress Ratio: 0.4
Environment: LAB AIR; RT

Yield Strength: 69.3 ksi
Ult. Strength:
Specimen Thk: 0.247 in.
Specimen Width: 2.003 in.
Ref: DA005

(1 of 2)

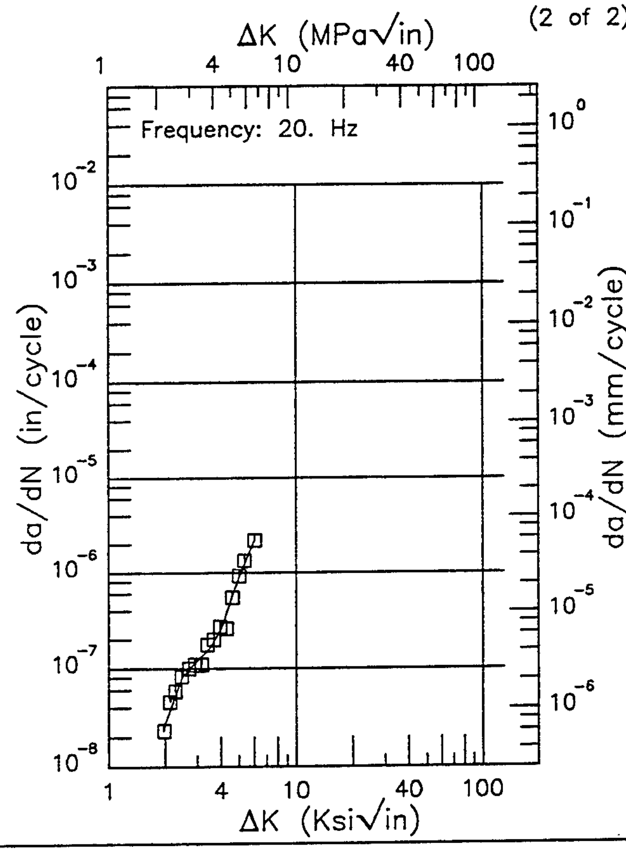


ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
4.31 (min)	0.371
5.	0.929
6.	2.17
7.	3.70
8.	5.33
9.	7.03
10.	8.86
13.	16.3
16.	29.2
20.	46.9
21.54 (max)	50.0

RMS % Error
3.72

Life Prediction Ratio Summary
0. .5 .8 1.25 2.

(2 of 2)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
1.97 (min)	0.0241
2.	0.0277
2.5	0.0847
3.	0.121
3.5	0.163
4.	0.254
5.	0.883
6.	2.14
6.05 (max)	2.17

RMS % Error
12.32

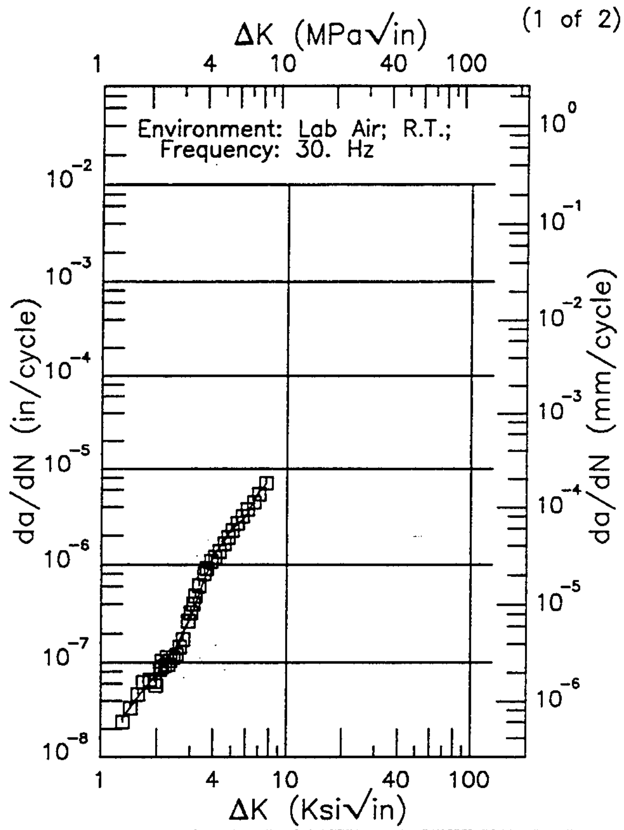
Life Prediction Ratio Summary
0. .5 .8 1.25 2.

Figure 8.19.3.1.97

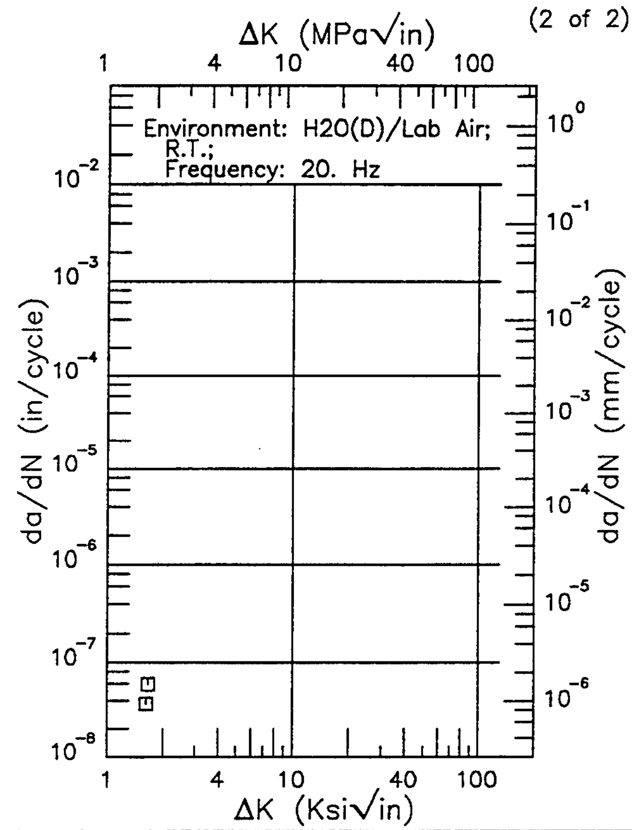
Condition/Ht: T7651
Form: 0.75 in. Plate
Specimen Type: CT
Orientation: L–T
Stress Ratio: 0.8

Yield Strength: 67.7 – 69.3 ksi
Ult. Strength:
Specimen Thk: 0.248 in.
Specimen Width: 2.003 in.
Ref: DA005

(1 of 2)



(2 of 2)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
1.31 (min)	0.0254
1.6	0.0449
2.	0.0757
2.5	0.140
3.	0.289
3.5	0.631
4.	1.20
5.	2.25
6.	3.18
7.	5.62
7.66 (max)	6.84

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error
11.88

Life Prediction Ratio Summary
0. .5 .8 1.25 2.

RMS % Error

Life Prediction Ratio Summary
0. .5 .8 1.25 2.

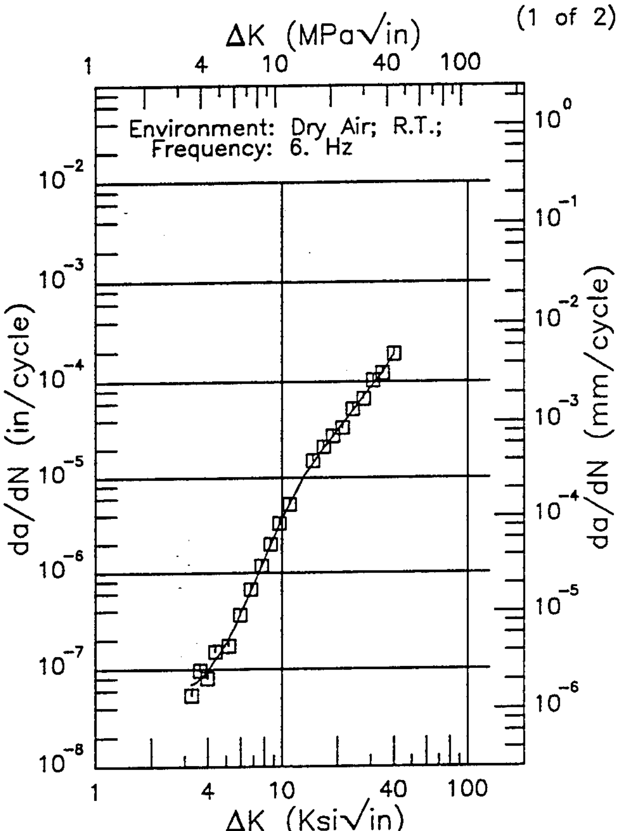
Figure 8.19.3.1.98

EF 7475

Condition/Ht: T7651
Form: 0.5 in. Plate
Specimen Type: CCP (max load specified)
Orientation: L–T
Stress Ratio: –0.2

Yield Strength: 70.6 ksi
Ult. Strength: 78.1 ksi
Specimen Thk: 0.2 – 0.202 in.
Specimen Width: 6.007 – 6.009 in.
Ref: GD006

(1 of 2)

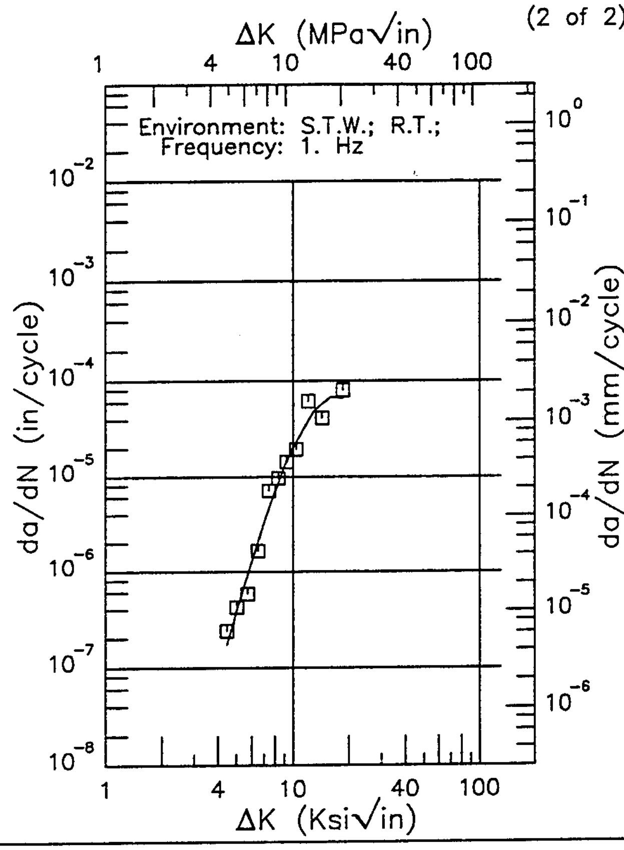


ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
3.26 (min)	0.0696
3.5	0.0746
4.	0.0950
5.	0.185
6.	0.379
7.	0.748
8.	1.38
9.	2.35
10.	3.73
13.	10.1
16.	18.2
20.	31.5
25.	55.9
30.	89.0
35.	128.
39.76 (max)	187.

RMS % Error
10.46

Life Prediction Ratio Summary
0. .5 .8 1.25 2.

(2 of 2)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
4.45 (min)	0.173
5.	0.382
6.	1.26
7.	3.27
8.	6.97
9.	12.7
10.	20.5
13.	49.3
16.	67.8
18.59 (max)	66.7

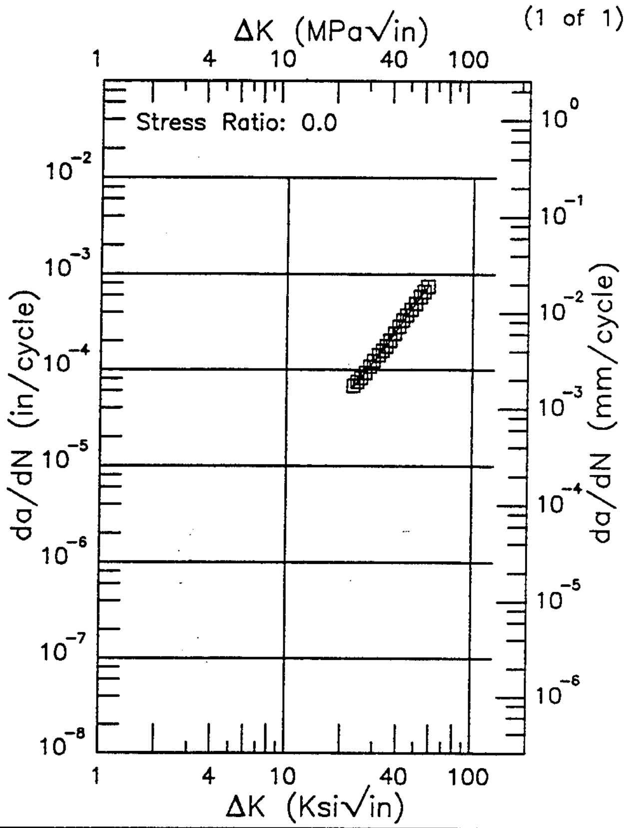
RMS % Error
32.97

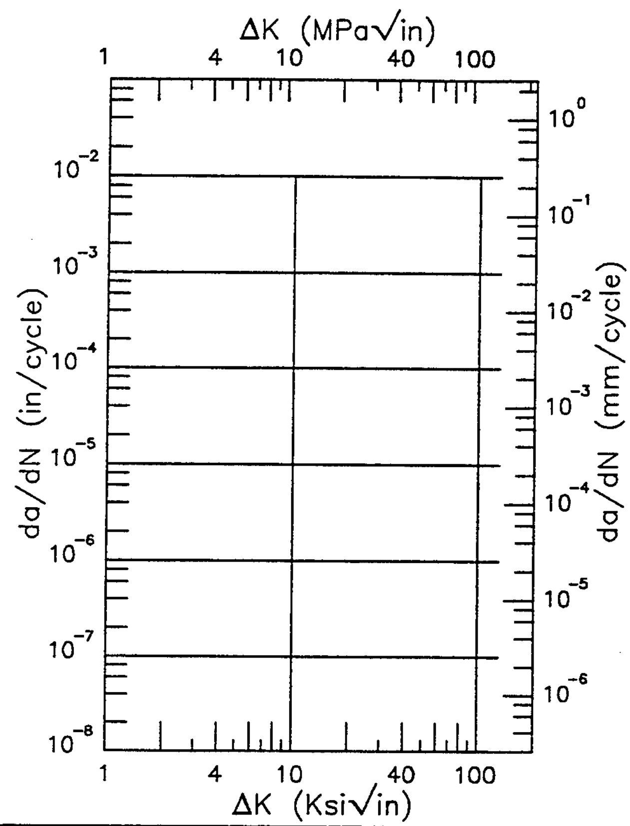
Life Prediction Ratio Summary
0. .5 .8 1.25 2.

Figure 8.19.3.1.99

Condition/Ht: T7651
Form: 0.25 in. Plate
Specimen Type: CCP (max stress specified)
Orientation: L–T
Frequency: 3 Hz
Environment: LAB AIR; RT

Yield Strength: 67.6 ksi
Ult. Strength:
Specimen Thk: 0.253 in.
Specimen Width: 12.011 in.
Ref: DA001





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
22.80 (min)	65.4
25.	81.3
30.	125.
35.	188.
40.	277.
50.	512.
57.35 (max)	745.

ΔK (Ksi√in) da/dN (10^{-6}in/cycle)

RMS % Error	Life Prediction Ratio Summary
1.49	0. .5 .8 1.25 2.

RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

Figure 8.19.3.1.100

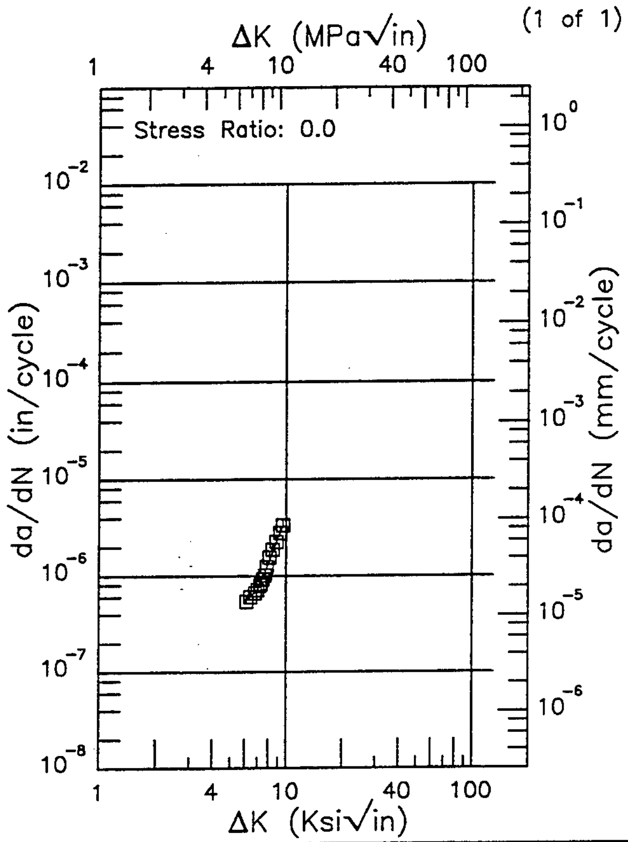
7475

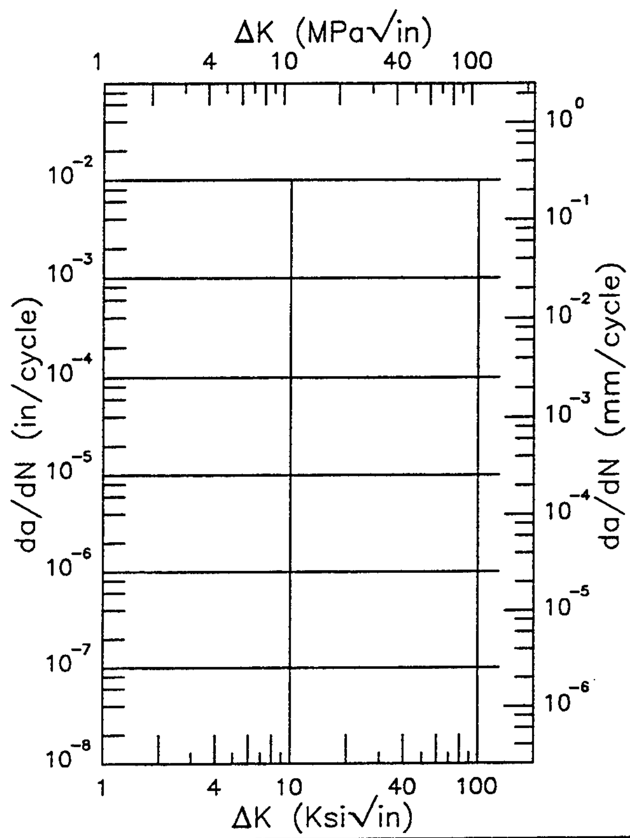
R

Condition/Ht: T7651
Form: 0.25 in. Plate
Specimen Type: CCP (max stress specified)
Orientation: L–T
Frequency: 30 Hz
Environment: LAB AIR; RT

Yield Strength: 67.6 ksi
Ult. Strength:
Specimen Thk: 0.252 in.
Specimen Width: 3.998 in.
Ref: DA001

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
6.12 (min)	0.561
7.	0.716
8.	1.33
9.	2.47
9.55 (max)	3.22

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error	Life Prediction Ratio Summary
4.52	0. .5 .8 1.25 2.

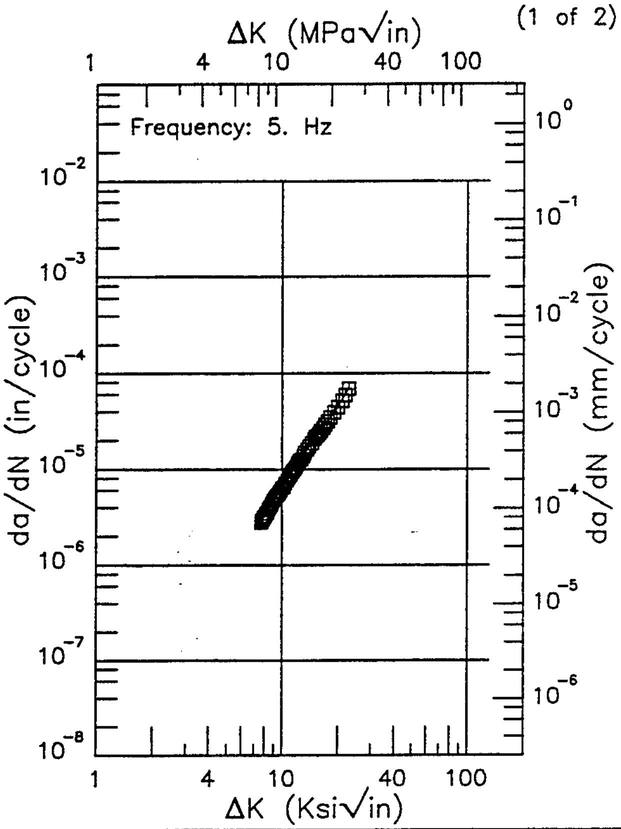
RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

Figure 8.19.3.1.101

Condition/Ht: T7651
Form: 0.75 in. Plate
Specimen Type: CCP (max load specified)
Orientation: L–T
Stress Ratio: 0.05
Environment: LAB AIR; RT

Yield Strength: 69 ksi
Ult. Strength:
Specimen Thk: 0.207 in.
Specimen Width: 12.009 in.
Ref: DA005

(1 of 2)



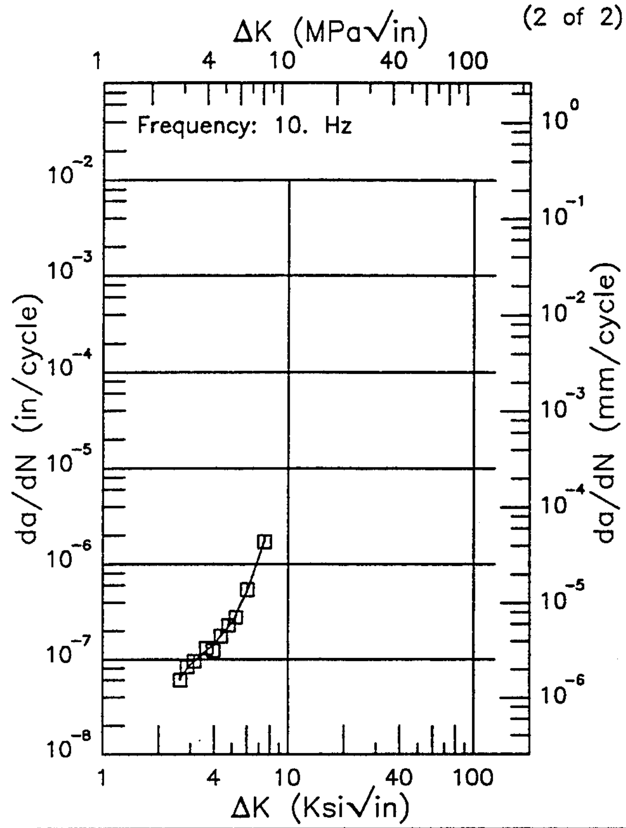
ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
7.68 (min)	2.80
8.	3.21
9.	4.70
10.	6.47
13.	14.0
16.	24.9
20.	44.8
22.59 (max)	68.0

RMS % Error 1.30

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

(2 of 2)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
2.62 (min)	0.0621
3.	0.0883
3.5	0.117
4.	0.145
5.	0.244
6.	0.517
7.	1.19
7.43 (max)	1.70

RMS % Error 5.56

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

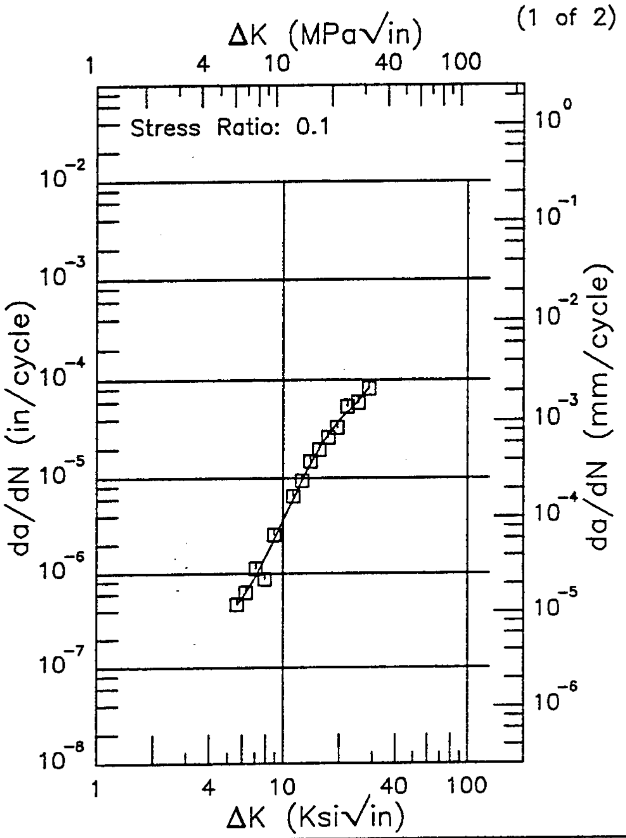
Figure 8.19.3.1.102

R 7475

Condition/Ht: T7651
Form: 0.5 in. Plate
Specimen Type: CCP (max load specified)
Orientation: L–T
Frequency: 6 Hz
Environment: DRY AIR; RT

Yield Strength: 70.6 ksi
Ult. Strength: 78.1 ksi
Specimen Thk: 0.2 – 0.201 in.
Specimen Width: 6.007 – 6.009 in.
Ref: GD006

(1 of 2)

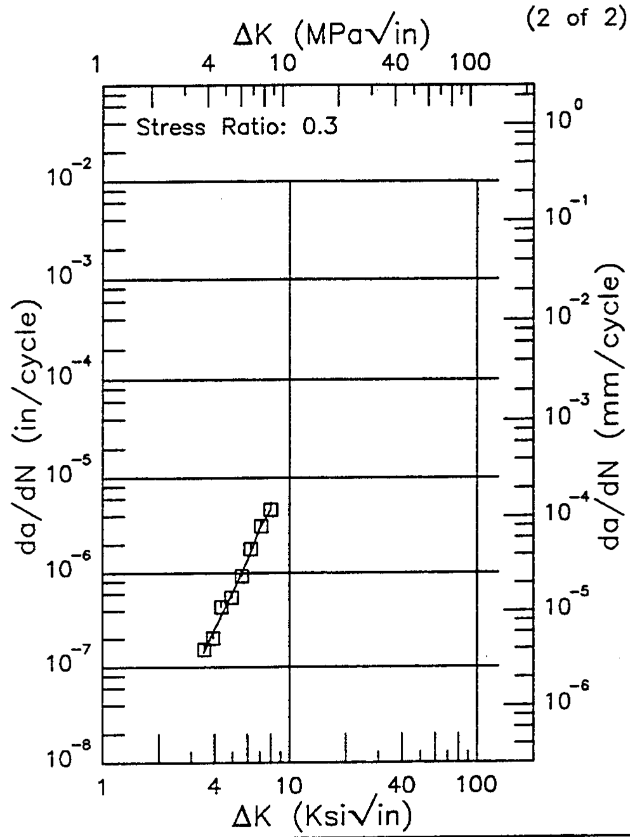


ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
5.62 (min)	0.470
6.	0.552
7.	0.889
8.	1.46
9.	2.34
10.	3.64
13.	10.7
16.	22.2
20.	39.0
25.	60.3
28.70 (max)	81.9

RMS % Error
13.29

Life Prediction Ratio Summary
0. .5 .8 1.25 2.

(2 of 2)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
3.51 (min)	0.141
4.	0.253
5.	0.612
6.	1.37
7.	2.97
7.94 (max)	4.59

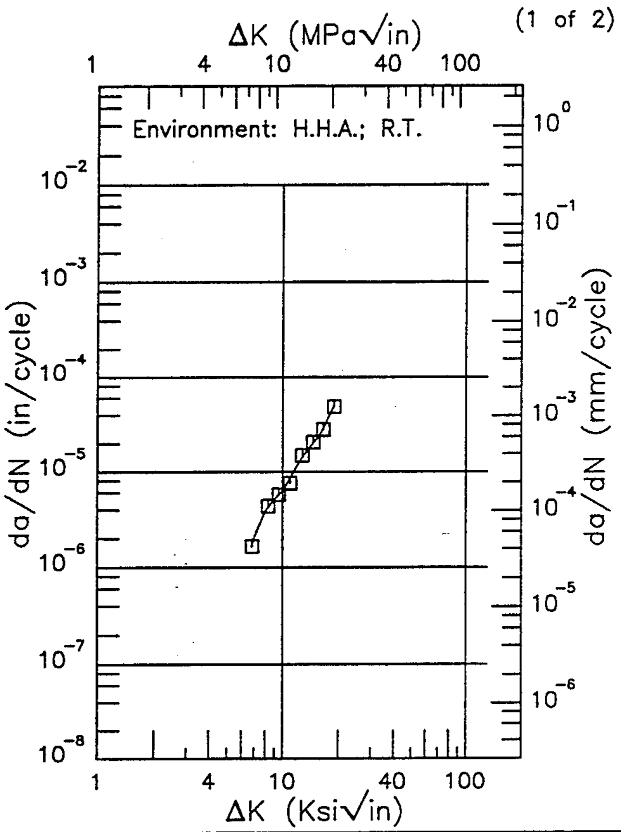
RMS % Error
10.38

Life Prediction Ratio Summary
0. .5 .8 1.25 2.

Figure 8.19.3.1.103

Condition/Ht: T7651
Form: 0.5 in. Plate
Specimen Type: CCP (max load specified)
Orientation: L-T
Stress Ratio: 0.1
Frequency: 0.1 Hz

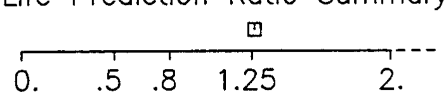
Yield Strength: 70.6 ksi
Ult. Strength: 78.1 ksi
Specimen Thk: 0.198 - 0.202 in.
Specimen Width: 6.006 - 6.007 in.
Ref: GD006

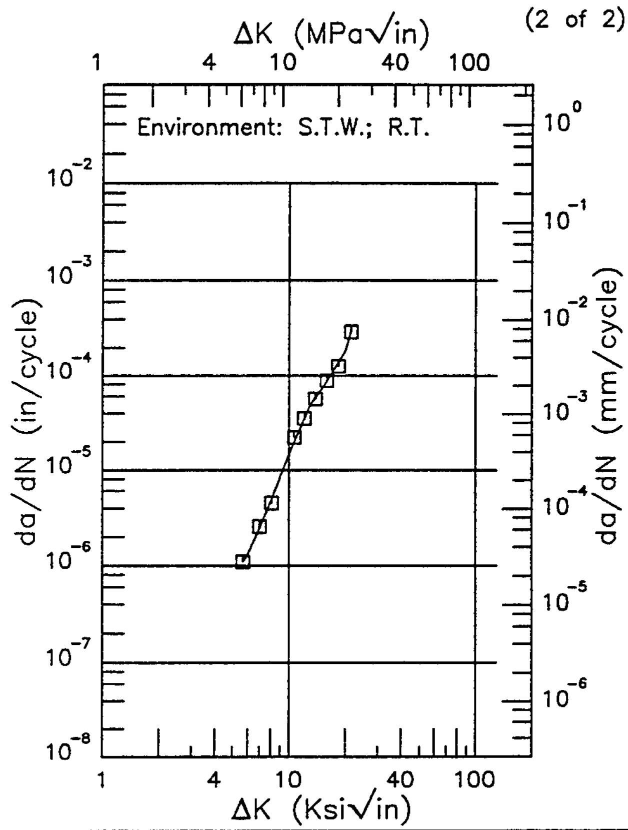


ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
6.80 (min)	1.65
7.	2.04
8.	3.88
9.	5.16
10.	6.27
13.	15.2
16.	25.7
18.72 (max)	48.2

RMS % Error
4.61

Life Prediction Ratio Summary





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
5.69 (min)	1.11
6.	1.30
7.	2.42
8.	4.64
9.	8.60
10.	14.9
13.	48.7
16.	86.7
20.	186.
21.30 (max)	290.

RMS % Error
6.68

Life Prediction Ratio Summary

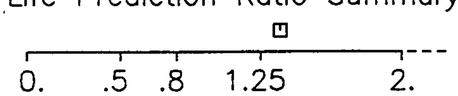


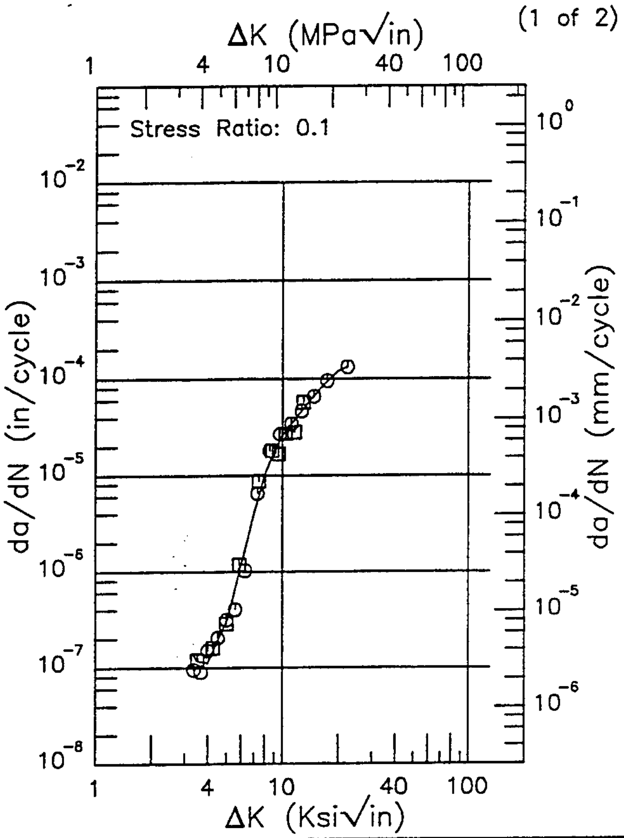
Figure 8.19.3.1.104

R 7475

Condition/Ht: T7651
Form: 0.5 in. Plate
Specimen Type: CCP (max load specified)
Orientation: L–T
Frequency: 1 Hz
Environment: S.T.W.; RT

Yield Strength: 70.6 ksi
Ult. Strength: 78.1 ksi
Specimen Thk: 0.202 – 0.206 in.
Specimen Width: 6.005 – 6.011 in.
Ref: GD006

(1 of 2)

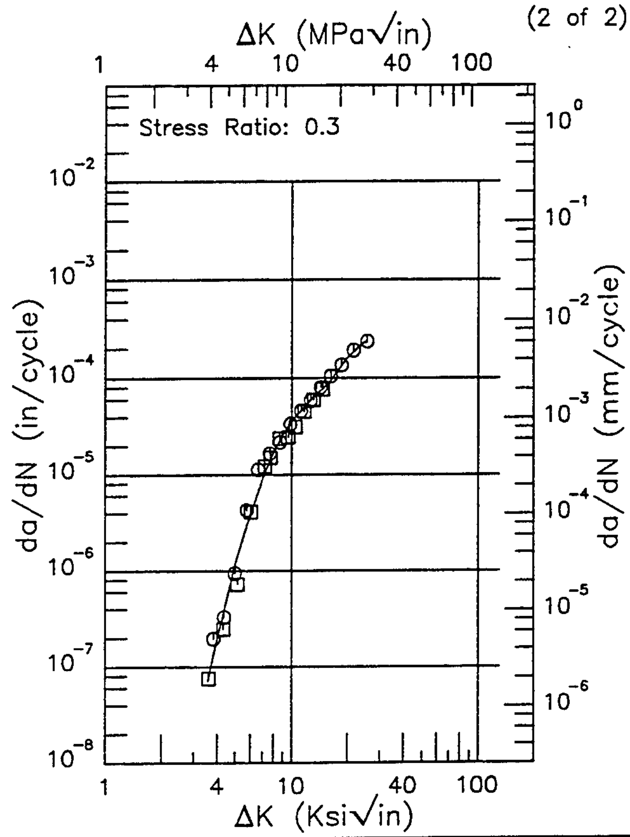


ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)
3.34 (min)	0.141
3.5	0.119
4.	0.113
5.	0.301
6.	1.18
7.	4.01
8.	10.0
9.	18.1
10.	26.4
13.	50.2
16.	80.5
20.	122.
22.11 (max)	131.

RMS % Error: 21.91

Life Prediction Ratio Summary: 0. .5 .8 1.25 2.

(2 of 2)



ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)
3.58 (min)	0.0716
4.	0.197
5.	1.16
6.	3.88
7.	9.07
8.	16.7
9.	26.2
10.	36.3
13.	62.9
16.	90.0
20.	162.
25.	236.
25.47 (max)	232.

RMS % Error: 24.14

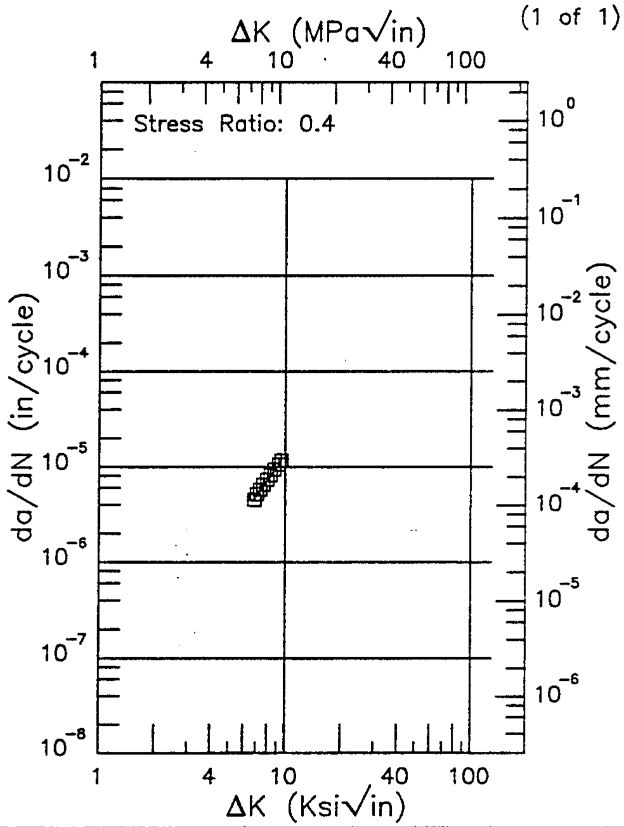
Life Prediction Ratio Summary: 0. .5 .8 1.25 2.

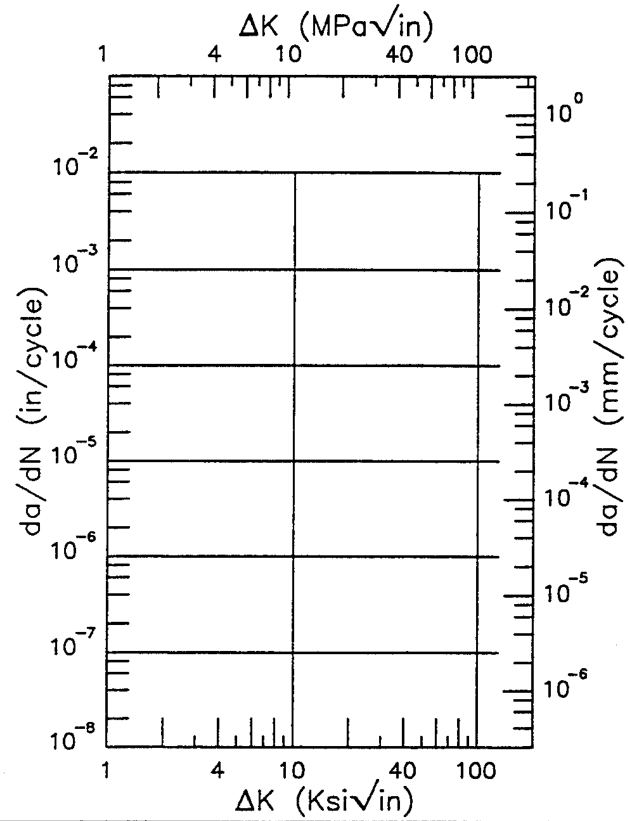
Figure 8.19.3.1.105

Condition/Ht: T7651
Form: 0.25 in. Plate
Specimen Type: CCP (max stress specified)
Orientation: L–T
Frequency: 30 Hz
Environment: LAB AIR; RT

Yield Strength: 67.6 ksi
Ult. Strength:
Specimen Thk: 0.252 in.
Specimen Width: 3.998 in.
Ref: DA001

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)
6.82 (min)	4.48
7.	4.94
8.	7.33
9.	10.0
9.50 (max)	11.5

ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)

RMS % Error	Life Prediction Ratio Summary
0.71	0. .5 .8 1.25 2.

RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

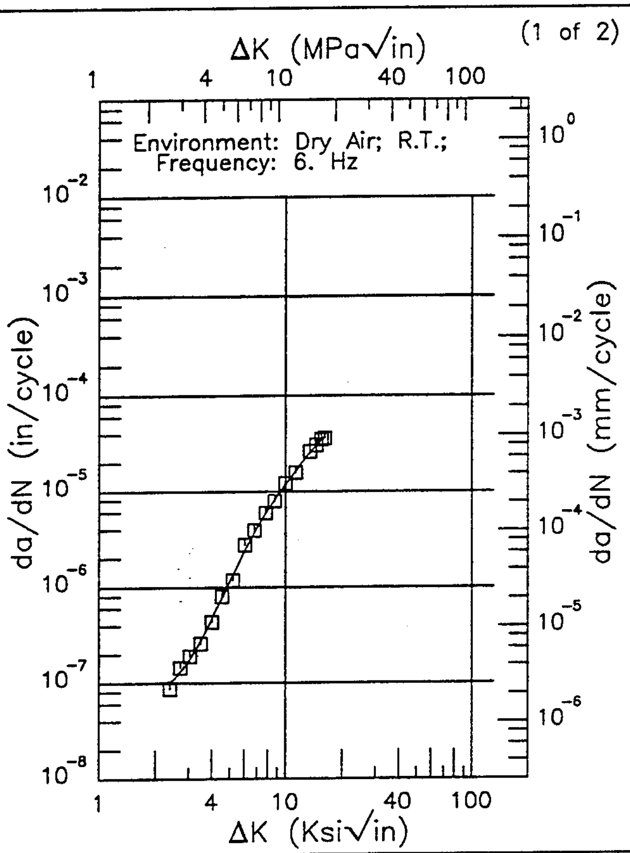
Figure 8.19.3.1.106

EF | 7475

Condition/Ht: T7651
Form: 0.5 in. Plate
Specimen Type: CCP (max load specified)
Orientation: L-T
Stress Ratio: 0.5

Yield Strength: 70.6 ksi
Ult. Strength: 78.1 ksi
Specimen Thk: 0.198 – 0.203 in.
Specimen Width: 6.005 – 6.009 in.
Ref: GD006

(1 of 2)



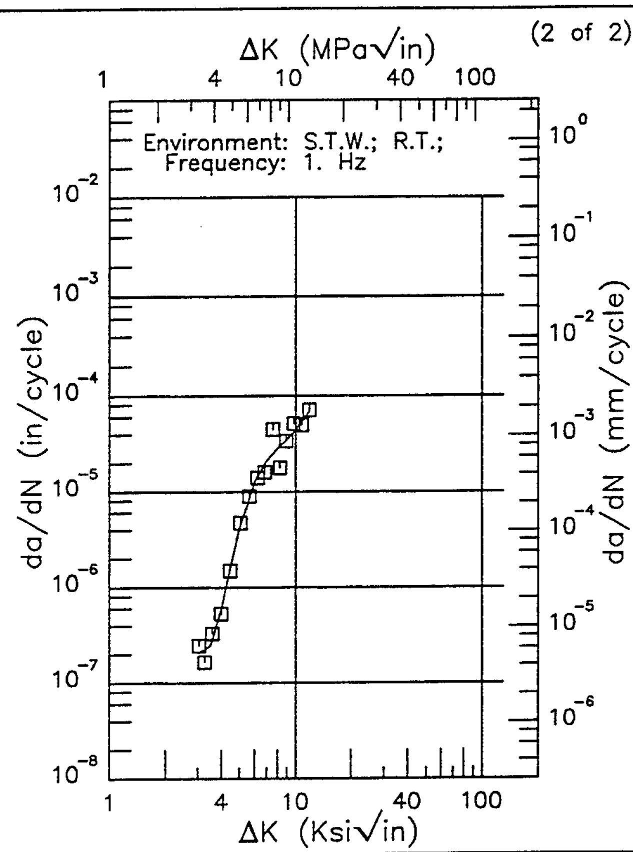
ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
2.38 (min)	0.101
2.5	0.110
3.	0.169
3.5	0.279
4.	0.461
5.	1.14
6.	2.38
7.	4.17
8.	6.37
9.	8.92
10.	11.8
13.	23.6
15.98 (max)	36.9

RMS % Error: 6.81

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

(2 of 2)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
3.02 (min)	0.205
3.5	0.249
4.	0.592
5.	4.07
6.	12.6
7.	21.4
8.	28.4
9.	35.1
10.	44.8
11.88 (max)	69.1

RMS % Error: 26.02

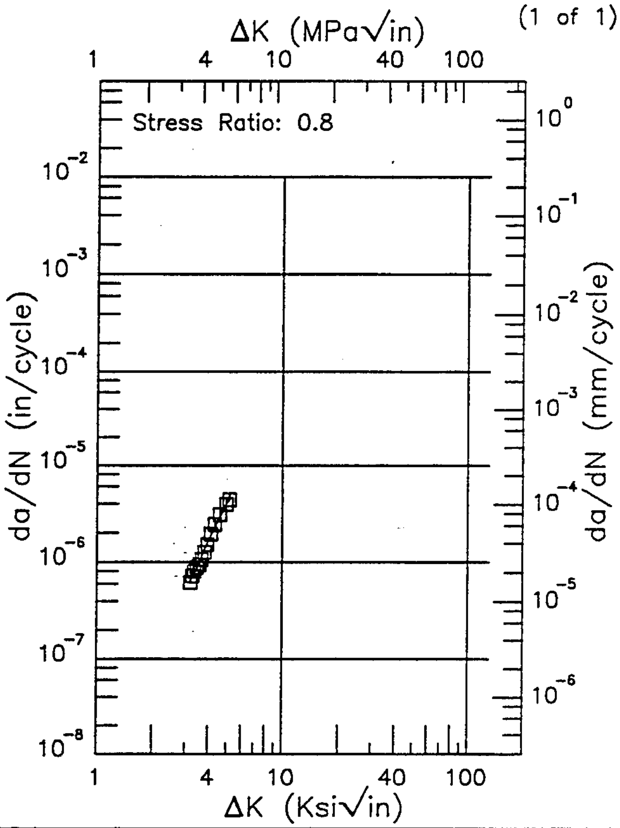
Life Prediction Ratio Summary

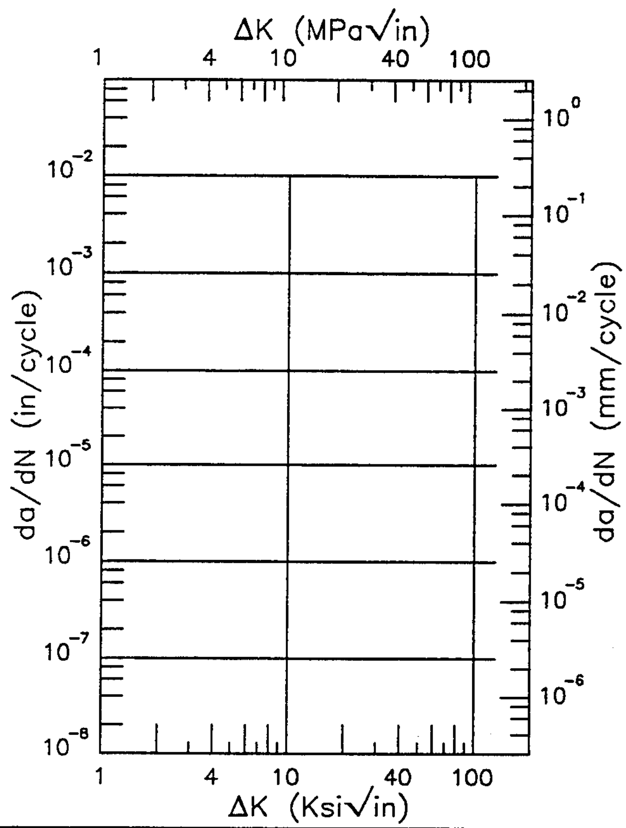
0. .5 .8 1.25 2.

Figure 8.19.3.1.107

Condition/Ht: T7651
Form: 0.25 in. Plate
Specimen Type: CCP (max stress specified)
Orientation: L–T
Frequency: 10 Hz
Environment: LAB AIR; RT

Yield Strength: 67.6 ksi
Ult. Strength:
Specimen Thk: 0.251 in.
Specimen Width: 4.002 in.
Ref: DA001





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
3.18 (min)	0.618
3.5	0.909
4.	1.69
5.	4.04
5.14 (max)	4.31

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error	Life Prediction Ratio Summary
4.16	0. .5 .8 1.25 2.

RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

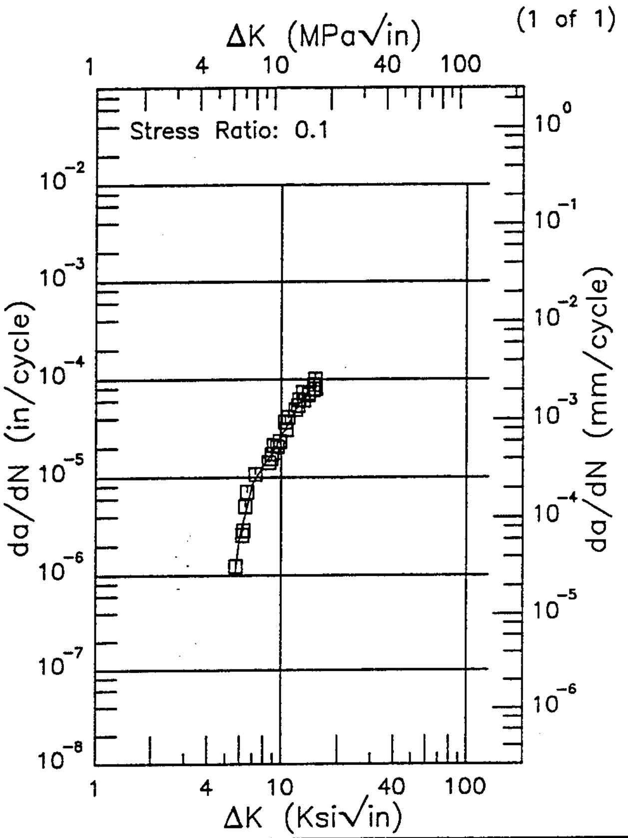
Figure 8.19.3.1.108

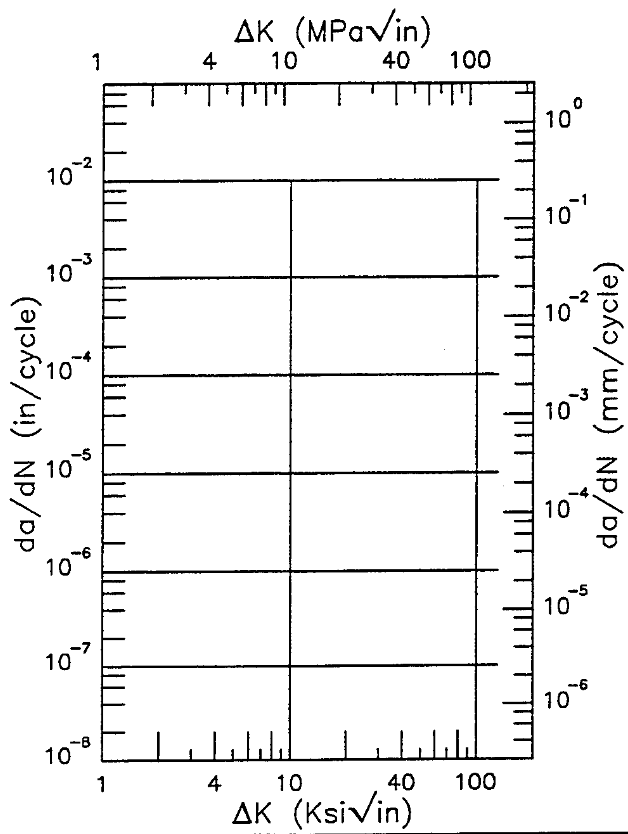
R 7475

Condition/Ht: T7651
Form: 1 in. Plate
Specimen Type:
Orientation:
Frequency: 1 Hz
Environment: 3.5% NACL; RT

Yield Strength:
Ult. Strength:
Specimen Thk:
Specimen Width:
Ref: 91332

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
5.68 (min)	1.06
6.	2.45
7.	8.63
8.	13.0
9.	18.2
10.	26.4
13.	64.8
15.14 (max)	93.7

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

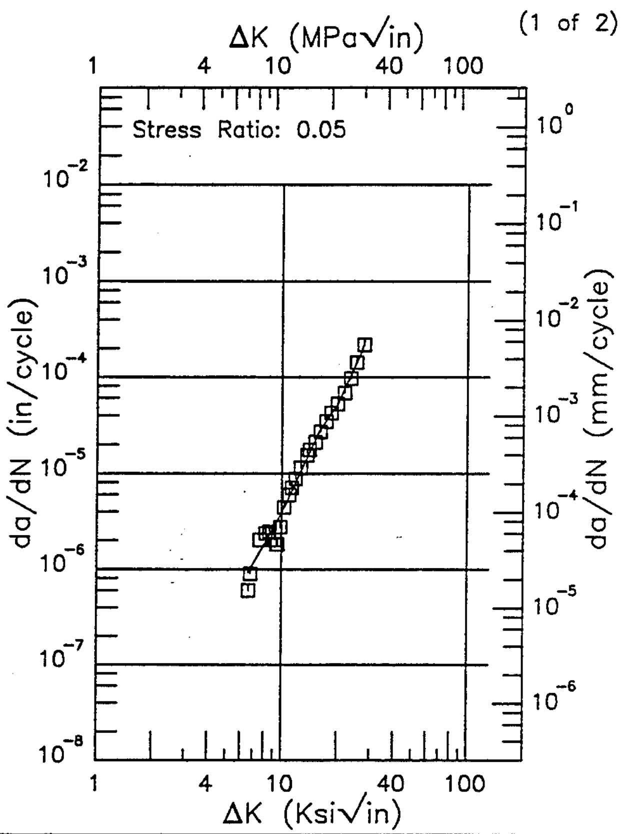
RMS % Error	Life Prediction Ratio Summary
13.76	0. .5 .8 1.25 2.

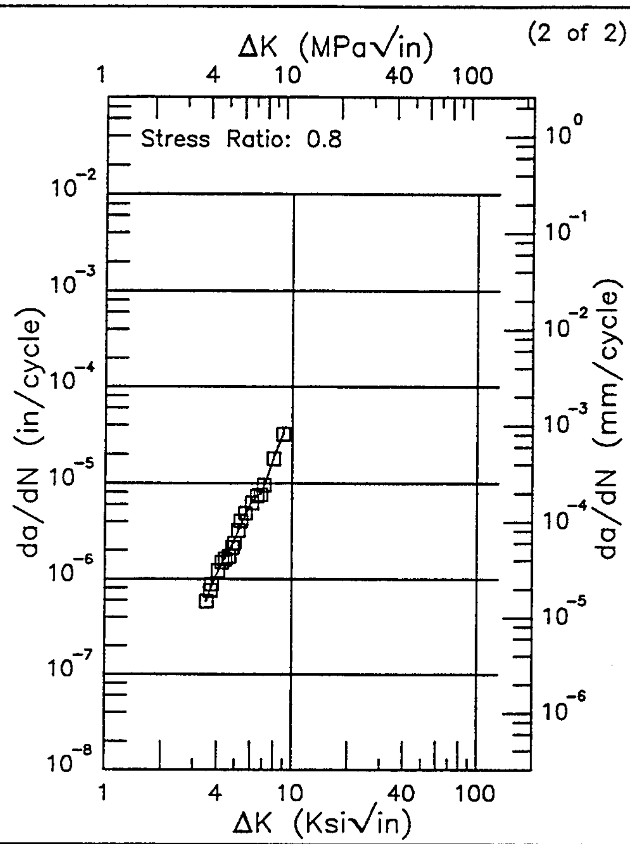
RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

Figure 8.19.3.1.109

Condition/Ht: T7651; 255F 4HR
Form: 1.75 in. Plate
Specimen Type: CT
Orientation: L–T
Frequency: 1 Hz
Environment: DIST WATER; RT

Yield Strength: 68.3 ksi
Ult. Strength: 77.6 ksi
Specimen Thk: 0.249 – 0.25 in.
Specimen Width: 2.002 – 2.003 in.
Ref: DA004





ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)
6.61 (min)	0.919
7.	1.13
8.	1.78
9.	2.68
10.	3.91
13.	11.7
16.	28.4
20.	51.7
25.	139.
27.61 (max)	217.

ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)
3.51 (min)	0.583
4.	1.14
5.	2.62
6.	6.18
7.	8.74
8.	18.5
8.93 (max)	31.8

RMS % Error	Life Prediction Ratio Summary
18.81	0. .5 .8 1.25 2.

RMS % Error	Life Prediction Ratio Summary
6.31	0. .5 .8 1.25 2.

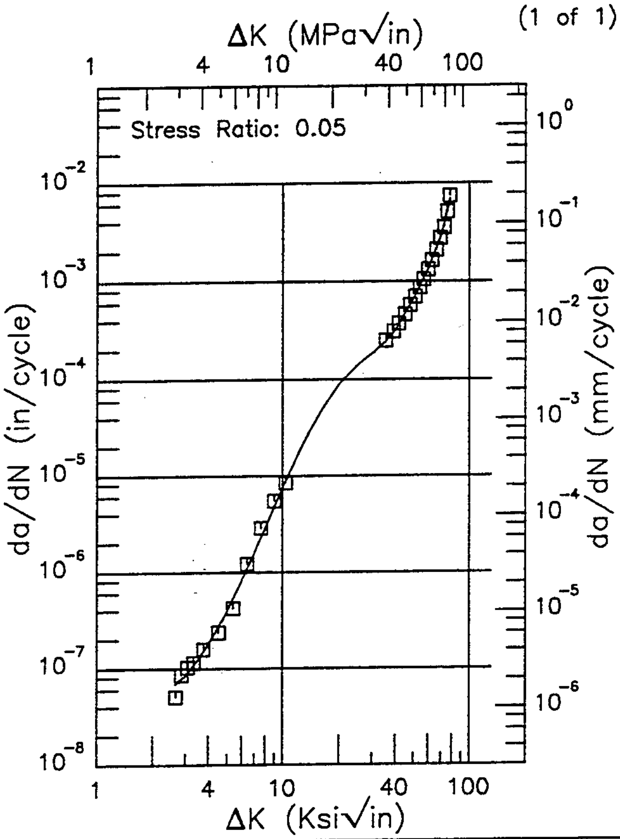
Figure 8.19.3.1.110

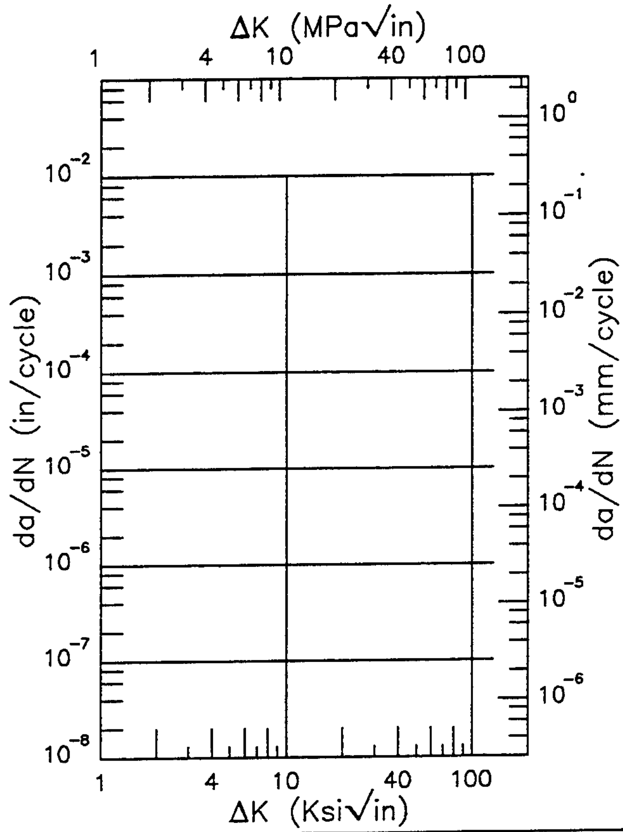
R 7475

Condition/Ht: T7651; 255F 4HR
Form: 1.75 in. Plate
Specimen Type: CCP (max load specified)
Orientation: L-T
Frequency: 8 Hz
Environment: LAB AIR; RT

Yield Strength: 68.3 ksi
Ult. Strength: 77.6 ksi
Specimen Thk: 0.199 in.
Specimen Width: 11.754 in.
Ref: DA004

(1 of 1)



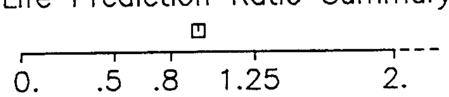


ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
2.66 (min)	0.0693
3.	0.0847
4.	0.179
5.	0.394
6.	0.820
7.	1.59
8.	2.85
9.	4.79
10.	7.59
16.	47.4
20.	90.4
30.	185.
40.	323.
60.	1359.
78.06 (max)	6927.

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error 11.55

Life Prediction Ratio Summary



RMS % Error

Life Prediction Ratio Summary

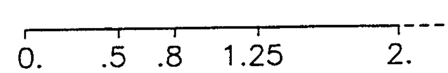
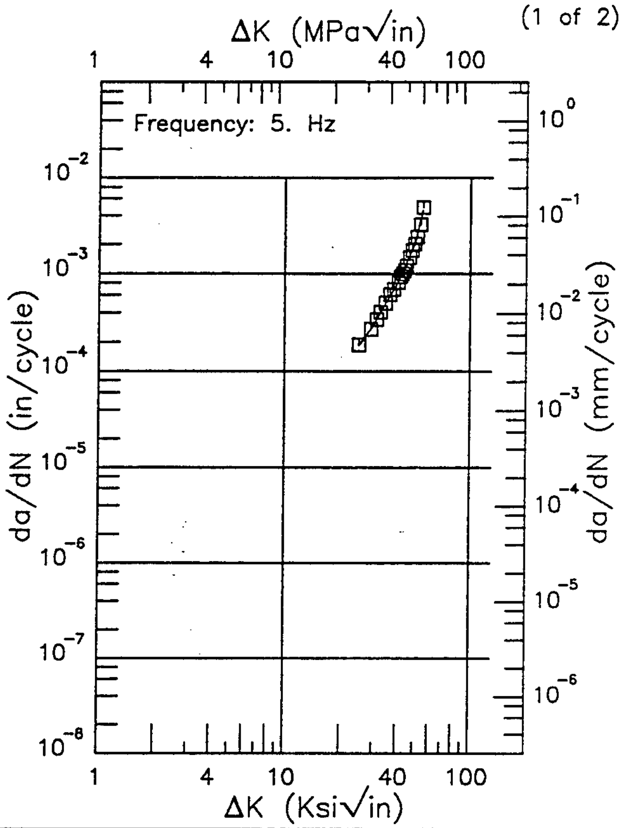


Figure 8.19.3.1.111

Condition/Ht: T7651; 255F 4HR
Form: 1.75 in. Plate
Specimen Type: CCP (max load specified)
Orientation: L-T
Stress Ratio: 0.4
Environment: LAB AIR; RT

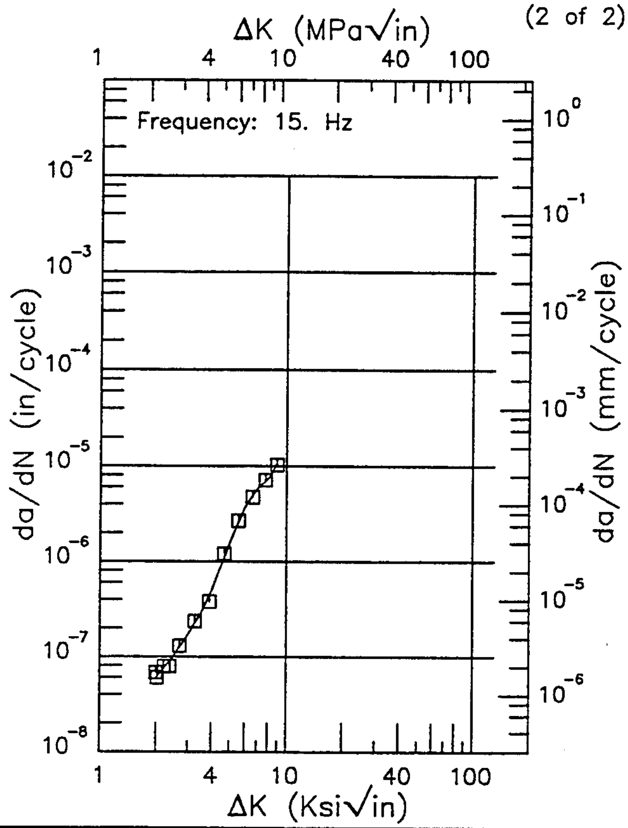
Yield Strength: 68.3 ksi
Ult. Strength: 77.6 ksi
Specimen Thk: 0.201 in.
Specimen Width: 11.755 in.
Ref: DA004



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
24.86 (min)	185.
25.	186.
30.	304.
35.	505.
40.	785.
50.	2015.
55.09 (max)	4556.

RMS % Error: 4.75

Life Prediction Ratio Summary
0. .5 .8 1.25 2.



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
1.99 (min)	0.0585
2.	0.0591
2.5	0.102
3.	0.170
3.5	0.285
4.	0.492
5.	1.53
6.	3.69
7.	5.76
8.	7.36
8.86 (max)	10.3

RMS % Error: 8.07

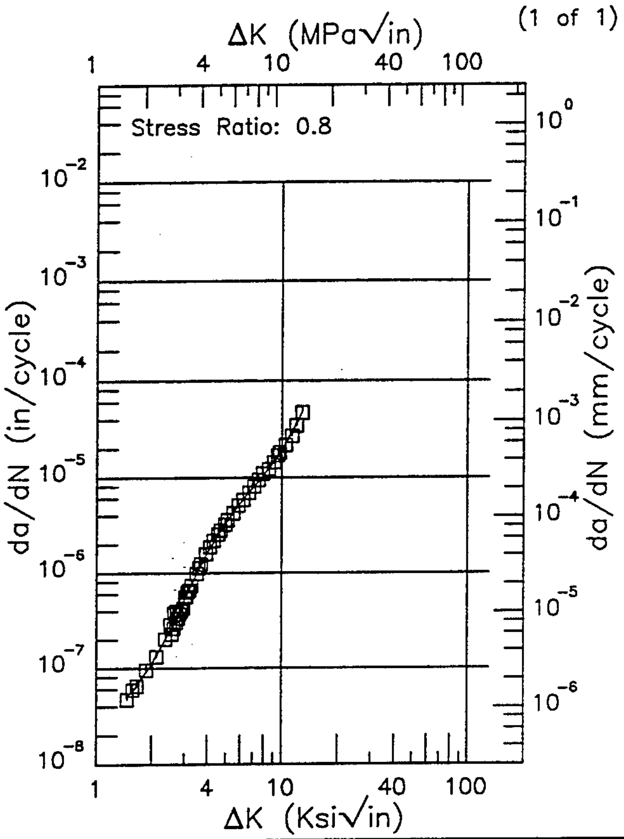
Life Prediction Ratio Summary
0. .5 .8 1.25 2.

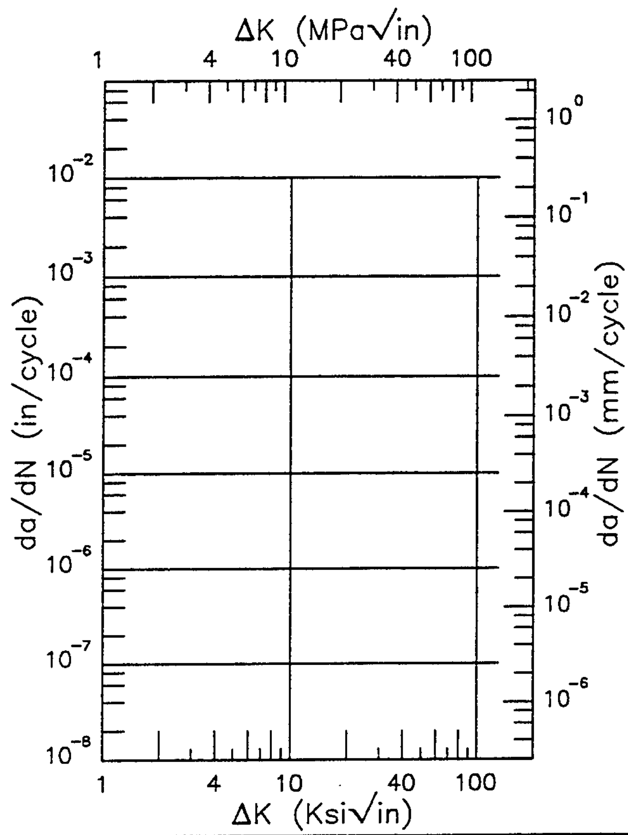
Figure 8.19.3.1.112

R 7475

Condition/Ht: T7651; 255F 4HR
Form: 1.75 in. Plate
Specimen Type: CCP (max load specified)
Orientation: L–T
Frequency: 10 – 15 Hz
Environment: LAB AIR; RT

Yield Strength: 68.3 ksi
Ult. Strength: 77.6 ksi
Specimen Thk: 0.2 in.
Specimen Width: 11.755 in.
Ref: DA004





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
1.46 (min)	0.0508
1.6	0.0596
2.	0.109
2.5	0.249
3.	0.526
3.5	0.986
4.	1.64
5.	3.34
6.	5.36
7.	7.76
8.	10.7
9.	14.5
10.	19.1
12.78 (max)	46.6

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error	Life Prediction Ratio Summary
6.83	0. .5 .8 1.25 2.

RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

Figure 8.19.3.1.113

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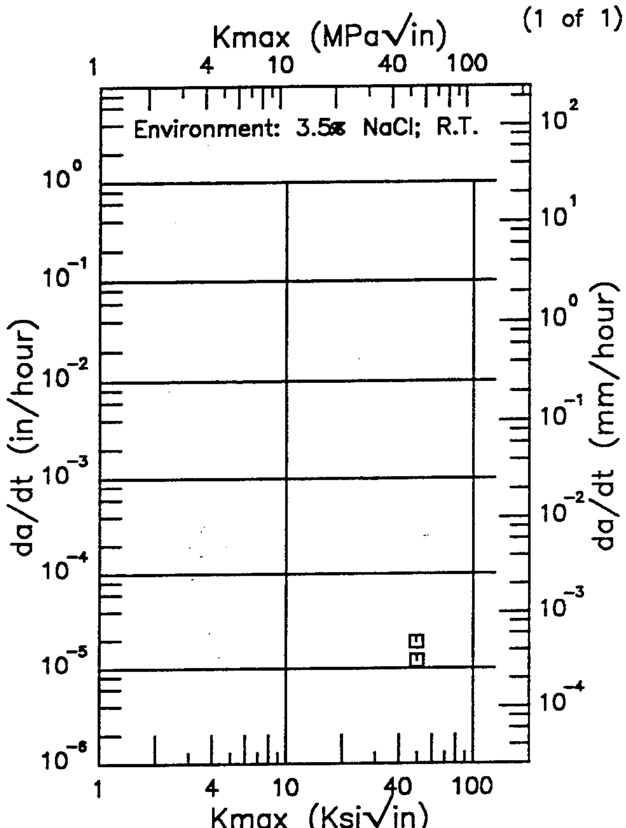
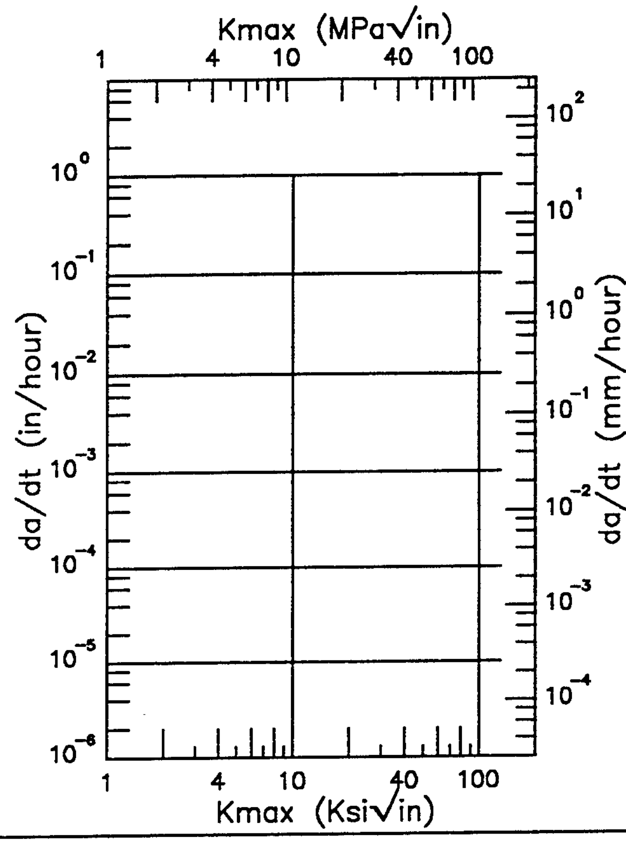
7475

Condition/Ht: T761
Form: 0.04 in. Sheet
Specimen Type: CNT
Orientation: L-T
Yield Strength: 59.8 ksi
Ult. Strength:

Specimen Thk: 0.04 in.
Specimen Width: 12 in.
A_0:
K_{Iscc}:
Ref: 86212

(1 of 1)





Kmax (Ksi√in)	da/dt (10^{-3}in/hour)

Kmax (Ksi√in)	da/dt (10^{-3}in/hour)

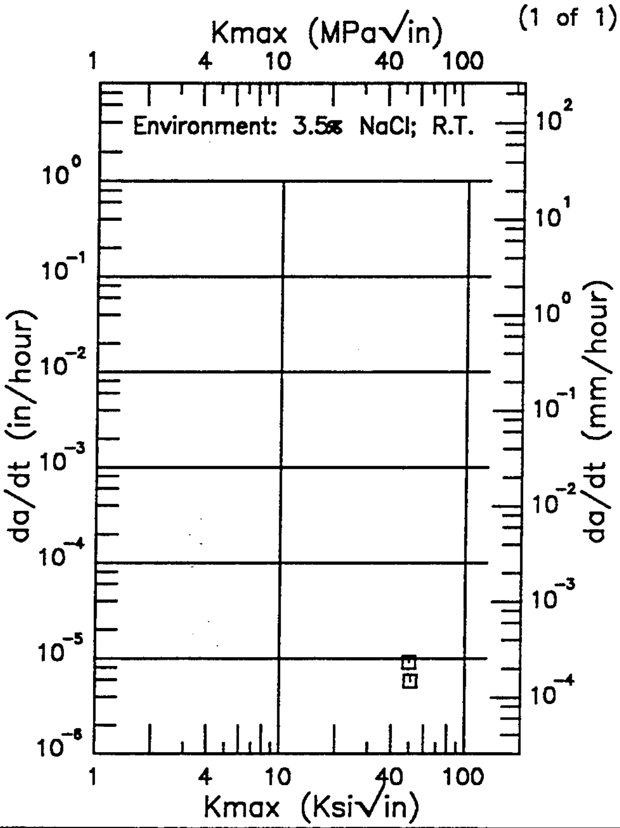
RMS % Error	

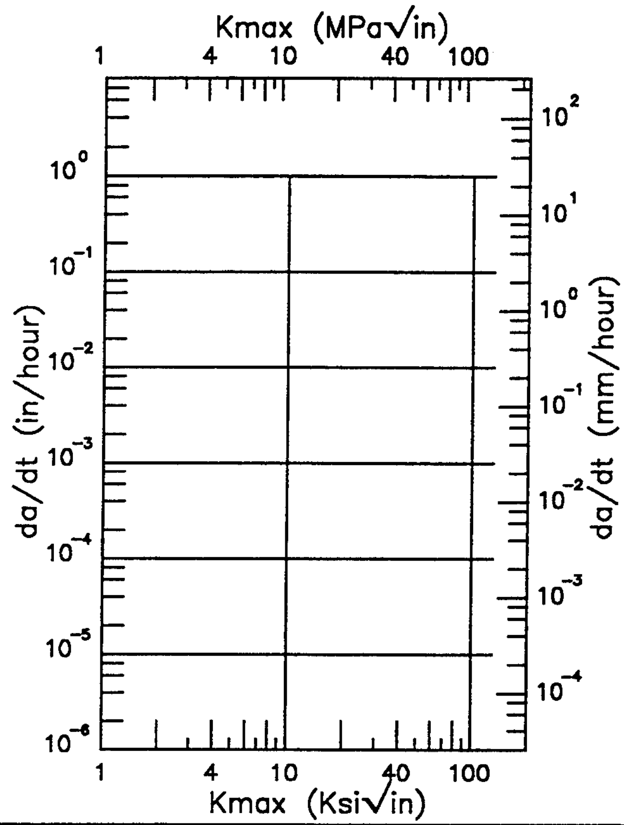
RMS % Error	

Figure 8.19.3.2.1

Condition/Ht: T761
Form: 0.04 in. Sheet
Specimen Type: CNT
Orientation: T–L
Yield Strength: 59.9 ksi
Ult. Strength:

Specimen Thk: 0.04 in.
Specimen Width: 12 in.
A_0:
K_{Iscc}:
Ref: 86212





Kmax (Ksi√in)	da/dt (10^{-3}in/hour)

Kmax (Ksi√in)	da/dt (10^{-3}in/hour)

RMS % Error	

RMS % Error	

Figure 8.19.3.2.2

TABLE 8.19.3.3

K_{Iscc} SUMMARY FOR ALUMINUM ALLOY 7475

Condition/ Heat Treat	Prod Form	Test Temp (°F)	Spec Or.	Yield Str (Ksi)	Envir.	Specimen Design	Specimen Width (in)	Specimen Thick (in)	Prod Thk (in)	Crack (in)	K_Q (Ksi√in)	K_{Iscc} (Ksi√in)	Test Time (min)	Test Date	Refer
T7351	P	R.T.	L-T	59.5	3.5% NaCl	BWOL	5.11	2.502	3	2.2	---	>37.5	112020	1978	GD006
						BWOL	5.097	2.503	3	2.18	---	>42.7	112020	1978	GD006
					S.T.W.	BWOL	5.093	2.5	3	2.18	---	>38.6	112020	1978	GD006
						BWOL	5.093	2.503	3	2.23	---	>42.7	112020	1978	GD006
				62	JP-4 Fuel	BWOL	3.087	1.252	1.25	1.38	---	>35	195840	1977	MA005
						BWOL	3.093	1.255	1.25	1.38	---	>35.2	195840	1977	MA005
					Sim. Sea Water	BWOL	3.085	1.25	1.25	1.37	---	>35	195840	1977	MA005
						BWOL	3.084	1.254	1.25	1.36	---	>35.1	195840	1977	MA005
			T-L	61.3	3.5% NaCl	BWOL	5.102	2.503	3	2.06	---	>31.5	112020	1978	GD006
						BWOL	5.107	2.505	3	2.2	---	>33.8	112020	1978	GD006
					S.T.W.	BWOL	5.119	2.502	3	2.18	---	>31.5	112020	1978	GD006
						BWOL	5.106	2.503	3	2.2	---	>34.1	112020	1978	GD006
				61.8	JP-4 Fuel	BWOL	3.082	1.253	1.25	1.36	---	>30.3	195840	1977	MA005
						BWOL	3.087	1.254	1.25	1.38	---	>30.6	195840	1977	MA005
					Sim. Sea Water	BWOL	3.087	1.25	1.25	1.35	---	>30.7	195840	1977	MA005
						BWOL	3.087	1.25	1.25	1.37	---	>30.5	195840	1977	MA005

TABLE 8.19.3.3 (CONCLUDED)

K_{Iscc} SUMMARY FOR ALUMINUM ALLOY 7475

Condition/ Heat Treat	Prod Form	Test Temp (°F)	Spec Or.	Yield Str (Ksi)	Envir.	Specimen Design	Specimen Width (in)	Specimen Thick (in)	Prod Thk (in)	Crack (in)	K_Q (Ksi√in)	K_{Iscc} (Ksi√in)	Test Time (min)	Test Date	Refer
T7351 (cont'd)	P (cont'd)	R.T. (cont'd)	S-L	57.4	3.5% NaCl	BWOL	2.554	1.003	3	1.11	---	>20.4	74400	1978	GD006
						BWOL	2.552	1.004	3	1.12	---	>30.6	68700	1978	GD006
					S.T.W.	BWOL	2.545	1.004	3	1.11	---	>30.9	74400	1978	GD006
						BWOL	2.554	1.006	3	1.09	---	26.6	74400	1978	GD006
T7651	P	R.T.	L-T	70.6	S.T.W.	BWOL	2.555	0.509	0.5	1.07	---	35.1+	104820	1978	GD006
						BWOL	2.555	0.509	0.5	1.08	---	30.9	104820	1978	GD006
			T-L	70.8	3.5% NaCl	BWOL	2.558	0.509	0.5	1.1	---	35.7+	104820	1978	GD006
						BWOL	2.557	0.509	0.5	1.12	---	35.7+	104820	1978	GD006
					S.T.W.	BWOL	2.557	0.509	0.5	1.09	---	34.5+	104820	1978	GD006
						BWOL	2.556	0.509	0.5	1.13	---	30.8	104820	1978	GD006

+ specimen thickness does not meet minimum requirements of $2.5\left(\frac{K_{Iscc}}{\sigma_{ys}}\right)^2$

TABLE 8.20.1.2.1

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF STRESS INTENSITY FACTOR ΔK 7475 (ALCLAD) AT ROOM TEMPERATURE

ORIENTATION: L-T **ENVIRONMENT: 3.5% NaCl**

CONDITION/ HEAT TREATMENT	PRODUCT FORM	R	FREQ (Hz)	*FCGR* (10^{-6} *in/cycle*) *ΔK Level* ($Ksi\sqrt{in}$)					
				2.5	5.0	10.0	20.0	50.0	100.0
T61	SHEET	0.05	2				105.87		
		0.25	2				116.93		
T761	SHEET	0.05	2				86.75		
		0.25	2				126.28		

TABLE 8.20.1.2.2

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF STRESS INTENSITY FACTOR ΔK 7475 (ALCLAD) AT ROOM TEMPERATURE

ORIENTATION: L-T **ENVIRONMENT: H.H.A.**

CONDITION/ HEAT TREATMENT	PRODUCT FORM	R	FREQ (Hz)	*FCGR* (10^{-6} *in/cycle*)					
				ΔK *Level* (*Ksi*$\sqrt{in}$)					
				2.5	5.0	10.0	20.0	50.0	100.0
T61	SHEET	0.05	2				37.17		
		0.25	2			13.34	69.6		
T761	SHEET	0.05	2				30.89		
		0.05	2				25.11		
		0.25	2			9.02	49.07		
		0.25	2			11.95	44.61		

TABLE 8.20.1.2.3

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF STRESS INTENSITY FACTOR ΔK 7475 (ALCLAD) AT ROOM TEMPERATURE

ORIENTATION: L-T **ENVIRONMENT: Lab Air**

CONDITION/ HEAT TREATMENT	PRODUCT FORM	R	FREQ (Hz)	*FCGR* (10^{-6} *in/cycle*) ΔK *Level* (*Ksi√in*)					
				2.5	5.0	10.0	20.0	50.0	100.0
T61	SHEET	0.	13.3			5.6	33.04		
		0.	13.3			6.37	31.76		
		0.33	13.3			10.71	52.97		
		0.33	13.3			12.36	57.7		

TABLE 8.20.1.2.4

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF STRESS INTENSITY FACTOR ΔK 7475 (ALCLAD) AT ROOM TEMPERATURE

ORIENTATION: T-L **ENVIRONMENT: 3.5% NaCl**

CONDITION/ HEAT TREATMENT	PRODUCT FORM	R	FREQ (Hz)	*FCGR* (10^{-6} *in/cycle*) ΔK *Level* (*Ksi√in*)					
				2.5	5.0	10.0	20.0	50.0	100.0
T61	SHEET	0.05	2				103.65		
T761	SHEET	0.05	2				90.2		

TABLE 8.20.1.2.5

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF STRESS INTENSITY FACTOR ΔK 7475 (ALCLAD) AT ROOM TEMPERATURE

ORIENTATION: T-L **ENVIRONMENT: H.H.A.**

CONDITION/ HEAT TREATMENT	PRODUCT FORM	R	FREQ (Hz)	*FCGR* (10^{-6} *in/cycle*) ΔK Level (Ksi√in) 2.5	5.0	10.0	20.0	50.0	100.0
T61	SHEET	0.05	2				45.09		
		0.05	2						
		0.05	2				40.49		
		0.25	2			9.09	62.92		
		0.25	2			10.82	56.45		
T761	SHEET	0.05	2				34.21		
		0.05	2					602.53	
		0.25	2			10.31	54.57		

TABLE 8.20.1.2.6

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF STRESS INTENSITY FACTOR ΔK 7475 (ALCLAD) AT ROOM TEMPERATURE

ORIENTATION: T-L **ENVIRONMENT: Lab Air**

CONDITION/ HEAT TREATMENT	PRODUCT FORM	R	FREQ (Hz)	*FCGR* (10^{-6} *in/cycle*)					
				ΔK *Level* (*Ksi√in*)					
				2.5	5.0	10.0	20.0	50.0	100.0
T61	SHEET	0.	13.3			8.56	22.04		
		0.33	13.3			10.48	33.83		
T761	SHEET	0.	13.3			6.13	32.92		
		0.33	13.3			10.27	48.15		

TABLE 8.20.2.2

ALUMINUM 7475 (ALCLAD) K_C

CONDITION HEAT TREAT	PRODUCT		TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN		CRACK LENGTH		GROSS STRESS		K_{app}			K_C			DATE	REFER
	FORM	THICK (in.)				WIDTH (in.) W	THICK (in.) B	INIT (in.) $2a_o$	FINAL (in.) $2a_f$	ONSET (Ksi) σ_o	MAX (Ksi) σ_{Max}	K_{app} (Ksi$\sqrt{in}$)	K_{app} MEAN	STAN DEV	K_c (Ksi$\sqrt{in}$)	K_c MEAN	STAN DEV		
BUCKLING OF CRACK EDGES RESTRAINED																			
T61	Sheet	0.13	R.T.	L-T	69.4	8.100	0.120	2.690	4.410	---	37.70	83.00*	---	---	122.70*	---	---	1982	LG002
		0.13			69.4	8.100	0.120	2.700	3.780	---	37.30	82.50*			105.40*			1982	LG002
		0.13			69.4	8.100	0.120	2.690	4.250	---	36.70	80.70			115.20*			1982	LG002
T61	Sheet	0.13	R.T.	L-T	69.4	12.130	0.120	3.990	5.940	---	34.40	92.40	93.3	3.5	123.80*	---	---	1982	LG002
		0.13			69.4	12.130	0.120	4.000	5.590	---	36.10	97.10			123.70*			1982	LG002
		0.13			69.4	12.130	0.120	4.010	5.930	---	33.60	90.30			121.00*			1982	LG002
T61	Sheet	0.13	R.T.	L-T	69.4	20.140	0.120	6.610	9.310	---	29.80	102.90	103.1	0.3	131.90	129.8	3.0	1982	LG002
		0.13			69.4	20.180	0.120	6.580	8.880	---	30.00	103.30			127.70			1982	LG002
BUCKLING OF CRACK EDGES NOT RESTRAINED																			
T61	Sheet	0.04	R.T.	L-T	71.3	3.000	0.039	1.460	2.548	---	30.60	54.55*	---	---	126.43*	---	---	1973	86213
		0.04			71.3	3.000	0.039	1.380	2.573	---	29.90	50.83			127.48*			1973	86213
T61	Sheet	0.06	R.T.	L-T	71.8	16.000	0.063	4.000	4.280	---	26.90	70.15	76.5	6.8	73.00	84.3	12.0	1972	84368
		0.06			71.8	16.000	0.063	5.970	6.250	---	20.00	67.10			69.31			1972	84368
		0.06			71.8	16.000	0.063	3.020	3.320	---	31.20	69.49			73.20			1972	84368
		0.06			71.8	16.000	0.063	3.980	4.550	---	30.10	78.27			84.73			1972	84368
		0.06			71.8	16.000	0.063	1.000	1.500	---	56.70	71.23*			87.51*			1972	84368
		0.06			69.3	16.000	0.064	3.980	5.300	---	32.70	85.03			101.29			1972	84368
		0.06			69.3	16.000	0.064	3.990	4.100	---	31.50	82.03			83.34			1972	84368
		0.06			69.3	16.000	0.064	3.000	4.070	---	37.30	82.77			98.26			1972	84368

* NOTE: NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STANDARD DEVIATION.

TABLE 8.20.2.2 (CONTINUED)

ALUMINUM 7475 (ALCLAD) K_C

CONDITION HEAT TREAT	PRODUCT FORM	PRODUCT THICK (in.)	TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN WIDTH (in.) W	SPECIMEN THICK (in.) B	CRACK LENGTH INIT (in.) $2a_o$	CRACK LENGTH FINAL (in.) $2a_f$	GROSS STRESS ONSET (Ksi) σ_o	GROSS STRESS MAX (Ksi) σ_{Max}	K_{app} (Ksi√in)	K_{app} MEAN	K_{app} STAN DEV	K_C (Ksi√in)	K_C MEAN	K_C STAN DEV	DATE	REFER
BUCKLING OF CRACK EDGES NOT RESTRAINED																			
T61 Cont'd	Sheet Cont'd	0.06	R.T. Cont'd	L-T Cont'd	69.3	16.000	0.064	1.000	1.930	---	58.00	72.87*	Cont'd	Cont'd	101.90*	Cont'd	Cont'd	1972	84368
		0.06			69.3	16.000	0.064	6.000	7.500	---	22.80	76.76			90.91			1972	84368
T61	Sheet	0.09	R.T.	L-T	73.9	15.880	0.089	3.990	4.720	---	33.60	87.55	85.6	2.8	96.82	94.7	3.1	1973	86842
		0.09			73.9	15.880	0.089	3.990	4.720	---	32.10	83.64			92.49			1973	86842
T61	Sheet	0.04	82	L-T	65.6	3.000	0.041	1.130	2.764	---	28.80	42.12	---	---	170.92*	---	---	1973	86213
		0.04			65.6	3.000	0.041	1.350	2.307	---	37.40	62.46*			119.39*			1973	86213
T61	Sheet	0.09	82	L-T	68.8	3.000	0.088	1.170	2.154	---	40.20	60.25*	---	---	112.95*	---	---	1973	86213
		0.09			68.8	3.000	0.089	1.150	2.340	---	40.70	60.26*			134.07*			1973	86213
T61	Sheet	0.18	82	L-T	73.8	3.000	0.192	1.080	2.166	---	43.50	61.66*	---	---	123.38*	---	---	1973	86213
		0.18			73.8	3.000	0.192	1.163	2.274	---	40.10	59.81*			124.42*			1973	86213
T61	Plate	0.25	82	L-T	69.6	3.000	0.243	1.133	2.311	---	38.10	55.79*	---	---	122.07*	---	---	1973	86213
		0.25			69.6	3.000	0.244	1.148	2.260	---	38.50	56.93*			118.01*			1973	86213
T61	Sheet	0.09	84	L-T	73.6	3.000	0.089	1.060	2.071	---	43.70	61.17*	---	---	115.20*	---	---	1973	86213
		0.09			73.6	3.000	0.089	1.080	2.147	---	43.50	61.66*			121.46*			1973	86213
T61	Sheet	0.09	84	L-T	71.0	3.000	0.098	1.090	2.196	---	42.20	60.19*	---	---	122.61*	---	---	1973	86213
		0.09			71.0	3.000	0.098	1.100	2.249	---	42.80	61.43*			129.85*			1973	86213
T61	Sheet	0.12	84	L-T	72.6	3.000	0.126	1.330	2.303	---	37.50	61.88*	---	---	119.28*	---	---	1973	86213
		0.12			72.6	3.000	0.126	1.150	2.193	---	42.30	62.63*			122.50*			1973	86213

* NOTE: NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STANDARD DEVIATION.

TABLE 8.20.2.2 (CONTINUED)

ALUMINUM 7475 (ALCLAD) K_C

CONDITION HEAT TREAT	PRODUCT		TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN		CRACK LENGTH		GROSS STRESS		K_{app}			K_C			DATE	REFER
	FORM	THICK (in.)				WIDTH (in.) W	THICK (in.) B	INIT (in.) $2a_o$	FINAL (in.) $2a_f$	ONSET (Ksi) σ_o	MAX (Ksi) σ_{Max}	K_{app} (Ksi$\sqrt{in}$)	K_{app} MEAN	STAN DEV	K_c (Ksi$\sqrt{in}$)	K_c MEAN	STAN DEV		
BUCKLING OF CRACK EDGES NOT RESTRAINED																			
T61 Cont'd	Sheet Cont'd	0.12	84 Cont'd	L-T Cont'd	69.1	3.000	0.130	1.280	2.316	---	37.40	59.91*	Cont'd	Cont'd	120.48*	Cont'd	Cont'd	1973	86213
		0.12			69.1	3.000	0.130	1.180	2.228	---	40.30	60.77*			120.22*			1973	86213
T61	Sheet	0.09	85	L-T	73.9	3.000	0.089	1.190	1.919	---	40.30	61.14*	---	---	95.48*	---	---	1973	86842
		0.09			73.9	3.000	0.089	1.200	1.997	---	39.90	60.90*			99.73*			1973	86842
T61	Sheet	0.06	86	L-T	69.9	3.000	0.063	1.180	2.062	---	40.00	60.32*	---	---	104.82*	---	---	1973	86213
		0.06			69.9	3.000	0.063	1.135	2.014	---	40.00	58.64*			101.26*			1973	86213
		0.06			71.8	3.000	0.063	1.150	1.893	---	41.00	60.70*			95.47*			1973	86842
		0.06			71.8	3.000	0.063	1.185	2.028	---	39.40	59.56*			100.74*			1973	86842
		0.06			73.0	3.000	0.063	1.115	1.872	---	41.60	60.23*			95.59*			1973	86213
		0.06			73.0	3.000	0.063	1.120	1.874	---	41.50	60.31*			95.49*			1973	86213
		0.06			69.3	3.000	0.064	1.135	1.976	---	39.90	58.49*			98.35*			1973	86842
		0.06			69.3	3.000	0.064	1.130	1.947	---	40.70	59.52*			98.28*			1973	86842
T61	Sheet	0.04	R.T.	T-L	64.8	3.000	0.041	1.210	2.404	---	32.50	49.91*	---	---	113.98*	---	---	1973	86213
		0.04			64.8	3.000	0.041	1.450	2.124	---	38.80	68.75*			106.51*			1973	86213
T61	Sheet	0.06	R.T.	T-L	68.4	16.000	0.063	3.990	4.380	---	29.80	77.60	78.6	4.1	81.99	86.9	7.5	1972	84368
		0.06			68.4	16.000	0.063	5.980	6.350	---	21.50	72.22			75.36			1972	84368
		0.06			68.4	16.000	0.063	4.000	4.500	---	28.00	73.02			78.30			1972	84368
		0.06			68.4	16.000	0.063	0.980	1.350	---	55.80	69.39*			81.62*			1972	84368
		0.06			68.4	16.000	0.063	3.000	3.520	---	36.50	81.00			88.48			1972	84368

* NOTE: NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STANDARD DEVIATION.

TABLE 8.20.2.2 (CONTINUED)

ALUMINUM 7475 (ALCLAD) K_C

CONDITION HEAT TREAT	PRODUCT FORM	PRODUCT THICK (in.)	TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN WIDTH (in.) W	SPECIMEN THICK (in.) B	CRACK LENGTH INIT (in.) $2a_o$	CRACK LENGTH FINAL (in.) $2a_f$	GROSS STRESS ONSET (Ksi) σ_o	GROSS STRESS MAX (Ksi) σ_{Max}	K_{app} (Ksi$\sqrt{in}$)	K_{app} MEAN	K_{app} STAN DEV	K_C (Ksi$\sqrt{in}$)	K_C MEAN	K_C STAN DEV	DATE	REFER
BUCKLING OF CRACK EDGES NOT RESTRAINED																			
T61 Cont'd	Sheet Cont'd	0.06	R.T. Cont'd	T-L Cont'd	66.5	16.000	0.064	1.000	1.780	---	57.30	71.99*	Cont'd	Cont'd	96.55*	Cont'd	Cont'd	1972	84368
		0.06			66.5	16.000	0.064	6.000	7.150	---	23.20	78.11			88.98			1972	84368
		0.06			66.5	16.000	0.064	4.000	5.080	---	31.20	81.36			94.05			1972	84368
		0.06			66.5	16.000	0.064	3.000	3.680	---	37.40	82.99			92.97			1972	84368
		0.06			66.5	16.000	0.064	4.000	5.080	---	31.50	82.15			94.95			1972	84368
T61	Sheet	0.09	R.T.	T-L	71.5	15.880	0.089	3.980	4.520	12.40	29.70	77.27	74.8	3.5	83.34	79.5	5.4	1973	86842
		0.09			71.5	15.880	0.089	3.960	4.270	---	27.90	72.38			75.66			1973	86842
T61	Sheet	0.04	82	T-L	66.0	3.000	0.038	1.400	2.407	---	31.60	54.36*	---	---	111.05*	---	---	1973	86213
		0.04			66.0	3.000	0.039	1.400	2.528	---	28.70	49.37*			115.63*			1973	86213
T61	Sheet	0.09	82	T-L	66.4	3.000	0.088	1.130	2.320	---	39.70	58.06*	---	---	128.36*	---	---	1973	86213
		0.09			66.4	3.000	0.088	1.140	2.388	---	39.70	58.42*			137.00*			1973	86213
T61	Sheet	0.18	82	T-L	71.6	3.000	0.192	1.142	2.201	---	39.30	57.90*	---	---	114.55*	---	---	1973	86213
		0.18			71.6	3.000	0.193	1.160	2.256	---	38.40	57.20*			117.30*			1973	86213
T61	Plate	0.25	82	T-L	67.8	3.000	0.244	1.157	2.113	---	36.10	53.64*	---	---	98.19*	---	---	1973	86213
		0.25			67.8	3.000	0.244	1.170	1.954	---	36.70	55.00*			89.10*			1973	86213
T61	Sheet	0.12	83	T-L	66.9	3.000	0.130	1.280	2.381	---	37.90	60.71*	---	---	129.75*	---	---	1973	86213
		0.12			66.9	3.000	0.130	1.170	2.210	---	39.40	59.05*			115.79*			1973	86213
T61	Sheet	0.09	84	T-L	71.6	3.000	0.089	1.180	2.175	---	40.30	60.77*	---	---	115.03*	---	---	1973	86213

* NOTE: NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STANDARD DEVIATION.

TABLE 8.20.2.2 (CONTINUED)

ALUMINUM 7475 (ALCLAD) K_C

CONDITION HEAT TREAT	PRODUCT FORM	PRODUCT THICK (in.)	TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN WIDTH (in.) W	SPECIMEN THICK (in.) B	CRACK LENGTH INIT (in.) $2a_o$	CRACK LENGTH FINAL (in.) $2a_f$	GROSS STRESS ONSET (Ksi) σ_o	GROSS STRESS MAX (Ksi) σ_{Max}	K_{app} (Ksi√in)	K_{app} MEAN	K_{app} STAN DEV	K_c (Ksi√in)	K_c MEAN	K_c STAN DEV	DATE	REFER
BUCKLING OF CRACK EDGES NOT RESTRAINED																			
T61	Sheet	0.09	84	T-L	69.4	3.000	0.097	1.100	2.215	---	41.70	59.85*	---	---	122.95*	---	---	1973	86213
		0.09			69.4	3.000	0.098	1.150	2.241	---	41.00	60.70*			123.54*			1973	86213
T61	Sheet	0.12	84	T-L	68.6	3.000	0.126	1.220	2.213	---	39.70	61.34*	---	---	116.86*	---	---	1973	86213
		0.12			68.6	3.000	0.126	1.140	2.192	---	41.70	61.36*			120.76*			1973	86213
T61	Sheet	0.06	85	T-L	68.4	3.000	0.064	1.175	1.996	---	38.30	57.54*	---	---	95.73*	---	---	1973	86842
		0.06			68.4	3.000	0.064	1.160	1.973	---	37.80	56.31*			92.92*			1973	86842
T61	Sheet	0.09	85	T-L	71.5	3.000	0.089	1.190	1.925	---	38.20	57.96*	---	---	90.87*	---	---	1973	86842
		0.09			71.5	3.000	0.090	1.190	1.872	---	39.40	59.78*			90.54*			1973	86842
		0.09			71.6	3.000	0.090	1.185	2.029	---	40.60	61.37*			103.81*			1973	86213
T61	Sheet	0.06	86	T-L	67.2	3.000	0.062	1.225	2.044	---	37.10	57.46*	---	---	95.96*	---	---	1973	86213
		0.06			67.2	3.000	0.062	1.110	2.011	---	39.00	56.33*			98.45*			1973	86213
		0.06			70.2	3.000	0.063	1.150	1.874	---	39.20	58.04*			90.20*			1973	86213
		0.06			70.2	3.000	0.063	1.150	1.854	---	39.70	58.78*			90.16*			1973	86213
		0.06			66.5	3.000	0.064	1.185	2.039	---	38.30	57.90*			98.64*			1973	86842
		0.06			66.5	3.000	0.064	1.180	2.040	---	38.20	57.60*			98.52*			1973	86842
T73	Sheet	0.09	82	L-T	60.6	3.000	0.089	1.150	2.450	---	37.20	55.07*	---	---	136.93*	---	---	1973	86213
		0.09			60.6	3.000	0.089	1.145	2.410	---	37.40	55.17*			131.97*			1973	86213
T73	Sheet	0.09	82	T-L	58.5	3.000	0.088	1.105	2.428	---	37.40	53.82*	---	---	134.46*	---	---	1973	86213
		0.09			58.5	3.000	0.089	1.200	2.417	---	35.60	54.34*			126.40*			1973	86213

* NOTE: NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STANDARD DEVIATION.

TABLE 8.20.2.2 (CONTINUED)

ALUMINUM 7475 (ALCLAD) K_C

CONDITION HEAT TREAT	PRODUCT FORM	PRODUCT THICK (in.)	TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN WIDTH (in.) W	SPECIMEN THICK (in.) B	CRACK LENGTH INIT (in.) $2a_o$	CRACK LENGTH FINAL (in.) $2a_f$	GROSS STRESS ONSET (Ksi) σ_o	GROSS STRESS MAX (Ksi) σ_{Max}	K_{app} (Ksi$\sqrt{in}$)	K_{app} MEAN	K_{app} STAN DEV	K_c (Ksi$\sqrt{in}$)	K_c MEAN	K_c STAN DEV	DATE	REFER
BUCKLING OF CRACK EDGES NOT RESTRAINED																			
T731	Plate	0.25	82	L-T	60.1	3.000	0.245	1.180	2.554	---	37.80	57.00*	---	---	157.39*	---	---	1973	86213
		0.25			60.1	3.000	0.245	1.185	2.558	---	37.70	56.99*			157.79*			1973	86213
T731	Sheet	0.25	82	T-L	58.8	3.000	0.245	1.233	2.580	---	36.60	56.96*	---	---	157.75*	---	---	1973	86213
		0.25			58.8	3.000	0.246	1.203	2.585	---	37.10	56.70*			160.78*			1973	86213
T761	Sheet	0.06	R.T.	L-T	62.0	15.880	0.062	2.980	3.920	---	39.50	87.37	83.0	4.4	101.87*	92.3	8.0	1973	86213
		0.06			62.0	15.880	0.062	1.000	2.000	---	57.40	72.12*			102.75*			1973	86213
		0.06			66.9	15.880	0.062	2.980	3.500	---	36.30	80.29			87.76			1973	86213
		0.06			62.0	15.880	0.063	3.990	5.130	---	33.20	86.51			100.81			1973	86213
		0.06			62.0	15.880	0.063	6.000	7.500	---	24.20	81.60			96.74			1973	86213
		0.06			62.0	15.880	0.063	4.000	4.920	---	33.90	88.46			100.24			1973	86213
		0.06			66.9	15.880	0.063	4.000	4.580	---	30.40	79.33			85.99			1973	86213
		0.06			66.9	15.880	0.063	1.000	1.520	32.90	52.50	65.96*			81.58*			1973	86213
		0.06			66.9	15.880	0.063	6.000	6.550	---	22.90	77.21			82.26			1973	86213
T761	Sheet	0.09	R.T.	L-T	66.5	15.880	0.089	4.000	5.000	18.60	37.00	96.55	96.0	0.7	110.53*	---	---	1973	86213
		0.09			66.5	15.880	0.089	4.000	4.950	12.80	36.60	95.51			108.64			1973	86213
T761	Sheet	0.09	82	L-T	61.4	3.000	0.087	1.160	2.267	---	37.40	55.71*	---	---	115.24*	---	---	1973	86213
		0.09			61.4	3.000	0.088	1.190	2.406	---	36.40	55.22*			127.92*			1973	86213
T761	Sheet	0.18	82	L-T	64.1	3.000	0.193	1.107	2.480	---	41.00	59.07*	---	---	156.05*	---	---	1973	86213
		0.18			64.1	3.000	0.193	1.090	2.495	---	40.80	58.20*			157.81*			1973	86213

* NOTE: NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STANDARD DEVIATION.

TABLE 8.20.2.2 (CONTINUED)

ALUMINUM 7475 (ALCLAD) K_C

CONDITION HEAT TREAT	PRODUCT FORM	PRODUCT THICK (in.)	TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN WIDTH (in.) W	SPECIMEN THICK (in.) B	CRACK LENGTH INIT (in.) $2a_o$	CRACK LENGTH FINAL (in.) $2a_f$	GROSS STRESS ONSET (Ksi) σ_o	GROSS STRESS MAX (Ksi) σ_{Max}	K_{app} (Ksi$\sqrt{in}$)	K_{app} MEAN	K_{app} STAN DEV	K_c (Ksi$\sqrt{in}$)	K_c MEAN	K_c STAN DEV	DATE	REFER
BUCKLING OF CRACK EDGES NOT RESTRAINED																			
T761	Plate	0.25	82	L-T	60.9	3.000	0.246	1.145	2.610	---	38.60	56.94*	---	---	173.56*	---	---	1973	86213
		0.25			60.9	3.000	0.246	1.138	2.522	---	39.00	57.31*			155.97*			1973	86213
T761	Sheet	0.06	85	L-T	62.0	3.000	0.063	1.185	1.993	---	38.40	58.05*	---	---	95.71*	---	---	1973	86213
		0.06			62.0	3.000	0.063	1.140	1.965	---	38.00	55.91*			92.89*			1973	86213
		0.06			66.9	3.000	0.063	1.140	2.041	---	38.80	57.09*			100.07*			1973	86213
		0.06			66.9	3.000	0.063	1.170	2.040	---	37.70	56.50*			97.23*			1973	86213
T761	Sheet	0.09	85	L-T	66.5	3.000	0.088	1.200	2.065	---	38.20	58.31*	---	---	100.25*	---	---	1973	86213
		0.09			66.5	3.000	0.088	1.150	2.057	---	39.40	58.33*			102.80*			1973	86213
T761	Sheet	0.06	R.T.	T-L	60.5	15.880	0.062	4.000	5.050	---	33.90	88.46	82.6	4.8	101.91*	90.1	6.9	1973	86213
		0.06			60.5	15.880	0.062	4.000	5.000	---	33.20	86.63			99.17			1973	86213
		0.06			60.5	15.880	0.063	3.020	3.920	---	39.30	87.56*			101.36*			1973	86213
		0.06			60.5	15.880	0.063	6.010	7.240	---	24.30	82.03			94.35			1973	86213
		0.06			60.5	15.880	0.063	1.000	1.980	---	55.10	69.23*			98.11*			1973	86213
		0.06			64.9	15.880	0.063	3.000	3.430	---	35.50	78.80			84.86			1973	86213
		0.06			64.9	15.880	0.063	1.000	1.420	---	58.00	72.87*			87.05*			1973	86213
		0.06			64.9	15.880	0.063	4.000	4.550	---	30.60	79.85			86.21			1973	86213
		0.06			64.9	15.880	0.063	3.990	4.600	---	33.30	86.77			94.45			1973	86213
		0.06			64.9	15.880	0.063	5.990	6.600	---	22.50	75.78			81.28			1973	86213

* NOTE: NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STANDARD DEVIATION.

TABLE 8.20.2.2 (CONCLUDED)

ALUMINUM 7475 (ALCLAD) K_C																			
CONDITION HEAT TREAT	PRODUCT		TEST TEMP (°F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN		CRACK LENGTH		GROSS STRESS		K_{app}			K_C			DATE	REFER
	FORM	THICK (in.)				WIDTH (in.) W	THICK (in.) B	INIT (in.) $2a_o$	FINAL (in.) $2a_f$	ONSET (Ksi) σ_o	MAX (Ksi) σ_{Max}	K_{app} (Ksi$\sqrt{in}$)	K_{app} MEAN	STAN DEV	K_C (Ksi$\sqrt{in}$)	K_C MEAN	STAN DEV		
BUCKLING OF CRACK EDGES NOT RESTRAINED																			
T761	Sheet	0.09	R.T.	T-L	65.6	15.880	0.089	3.970	4.600	14.90	31.70	82.36	82.9	0.8	89.91	91.7	2.5	1973	86213
		0.09			65.6	15.880	0.089	3.980	4.800	---	32.10	83.52			93.46			1973	86213
T761	Sheet	0.09	82	T-L	59.4	3.000	0.088	1.170	2.387	---	36.30	54.41*	---	---	125.02*	---	---	1973	86213
		0.09			59.4	3.000	0.088	1.155	2.397	---	36.70	54.47*			127.67*			1973	86213
T761	Sheet	0.18	82	T-L	62.9	3.000	0.193	1.188	2.413	---	38.90	58.95*	---	---	137.55*	---	---	1973	86213
		0.18			62.9	3.000	0.193	1.240	2.551	---	37.50	58.64*			155.33*			1973	86213
T761	Plate	0.25	82	T-L	61.9	3.000	0.245	1.180	2.723	---	38.00	57.30*	---	---	206.31*	---	---	1973	86213
		0.25			61.9	3.000	0.245	1.197	2.580	---	37.70	57.41*			162.49*			1973	86213
T761	Sheet	0.06	85	T-L	60.5	3.000	0.063	1.140	2.190	---	37.40	55.03*	---	---	108.13*	---	---	1973	86213
		0.06			60.5	3.000	0.063	1.085	2.085	---	39.00	55.42*			103.88*			1973	86213
		0.06			64.9	3.000	0.063	1.165	2.046	---	39.20	58.54*			101.54*			1973	86213
		0.06			64.9	3.000	0.063	1.150	1.923	---	39.90	59.07*			94.79*			1973	86213
T761	Sheet	0.09	85	T-L	65.6	3.000	0.089	1.170	2.033	---	39.00	58.45*	---	---	100.01*	---	---	1973	86213
		0.09			65.6	3.000	0.089	1.150	2.066	---	39.70	58.78*			104.34*			1973	86213

* NOTE: NET SECTION STRESS EXCEEDS 80% OF YIELD STRENGTH. VALUE NOT INCLUDED IN MEAN OR STANDARD DEVIATION.

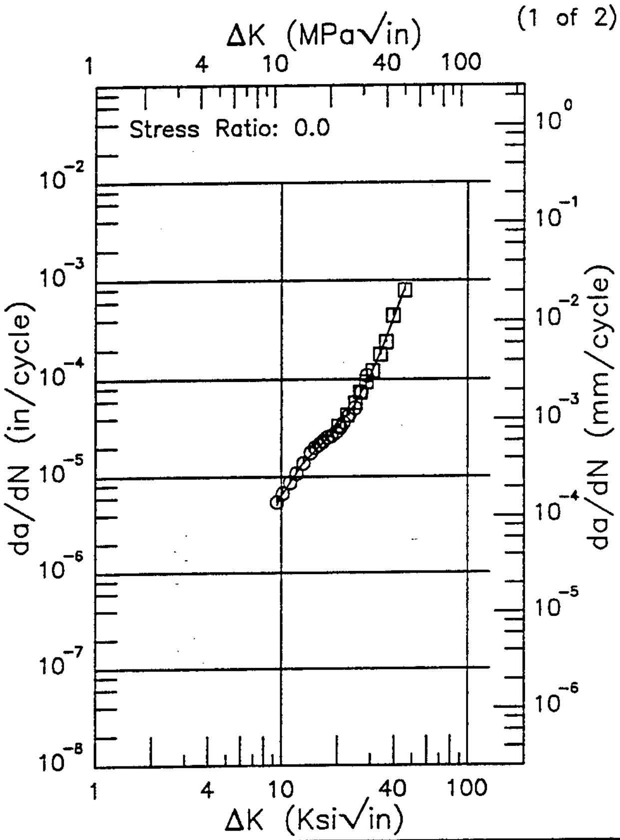
R

7475 (ALCLAD)

Condition/Ht: T61
Form: 0.09 in. Sheet
Specimen Type: CCP (max load specified)
Orientation: L–T
Frequency: 13.3 Hz
Environment: LAB AIR; RT

Yield Strength: 73.6 ksi
Ult. Strength: 79.8 ksi
Specimen Thk: 0.087 – 0.088 in.
Specimen Width: 4 in.
Ref: 86213

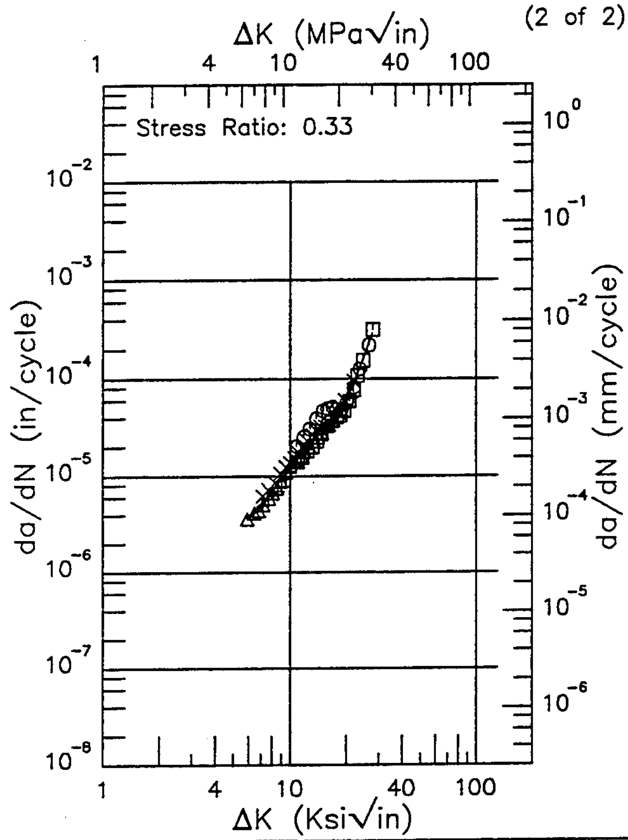
(1 of 2)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
9.44 (min)	5.07
10.	6.37
13.	13.6
16.	20.6
20.	31.8
25.	56.8
30.	109.
35.	219.
40.	433.
45.47 (max)	803.

RMS % Error	Life Prediction Ratio Summary
5.95	0. .5 .8 1.25 2.

(2 of 2)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
5.91 (min)	3.60
6.	3.68
7.	4.92
8.	6.80
9.	9.31
10.	12.4
13.	23.2
16.	35.0
20.	57.7
25.	169.
27.65 (max)	294.

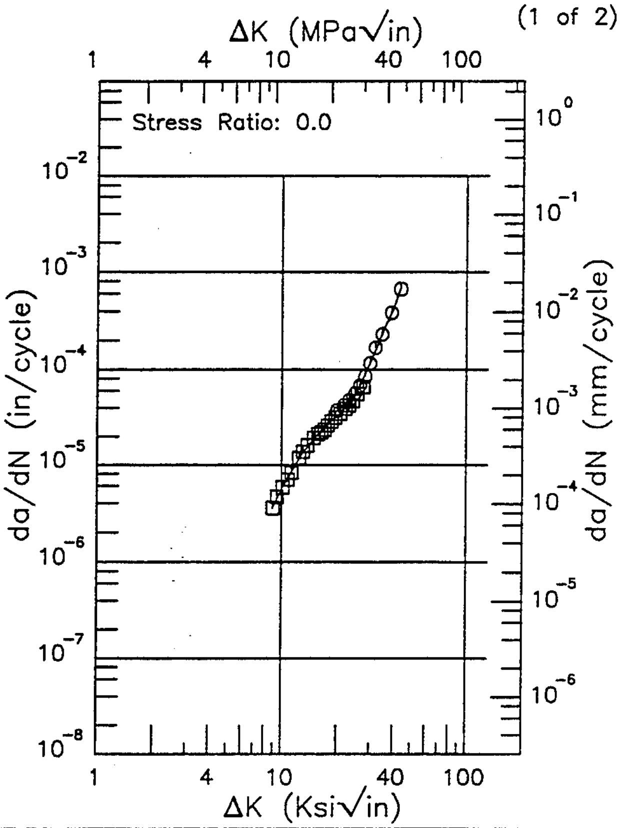
RMS % Error	Life Prediction Ratio Summary
14.79	0. .5 .8 1.25 2.

Figure 8.20.3.1.1

Condition/Ht: T61
Form: 0.1 in. Sheet
Specimen Type: CCP (max load specified)
Orientation: L–T
Frequency: 13.3 Hz
Environment: LAB AIR; RT

Yield Strength: 71 ksi
Ult. Strength: 76.8 ksi
Specimen Thk: 0.101 – 0.102 in.
Specimen Width: 4 in.
Ref: 86213

(1 of 2)



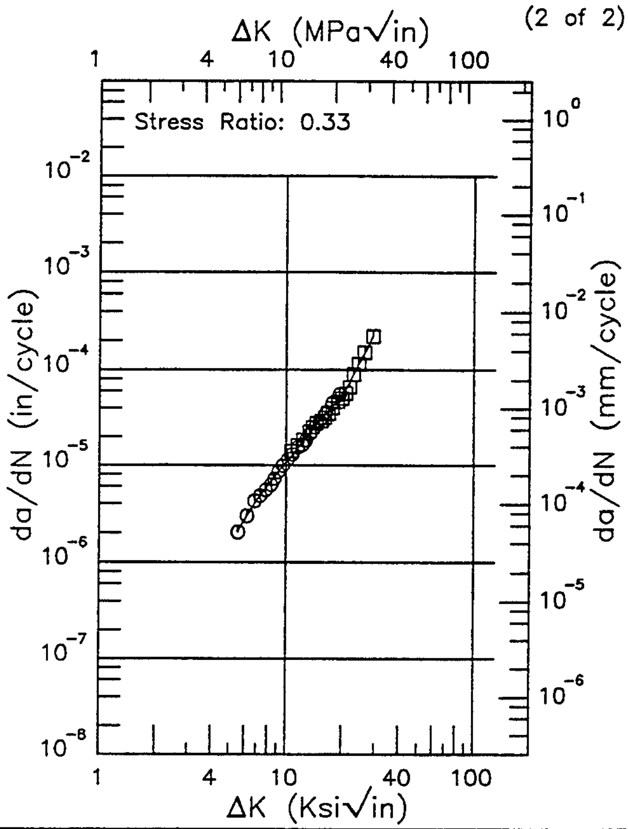
ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
8.88 (min)	3.54
9.	3.73
10.	5.60
13.	13.3
16.	22.3
20.	33.0
25.	54.4
30.	118.
35.	248.
40.	431.
43.48 (max)	664.

RMS % Error: 5.85

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

(2 of 2)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
5.54 (min)	2.08
6.	2.69
7.	4.26
8.	6.12
9.	8.27
10.	10.7
13.	20.2
16.	32.7
20.	53.0
25.	123.
29.02 (max)	219.

RMS % Error: 5.39

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

Figure 8.20.3.1.2

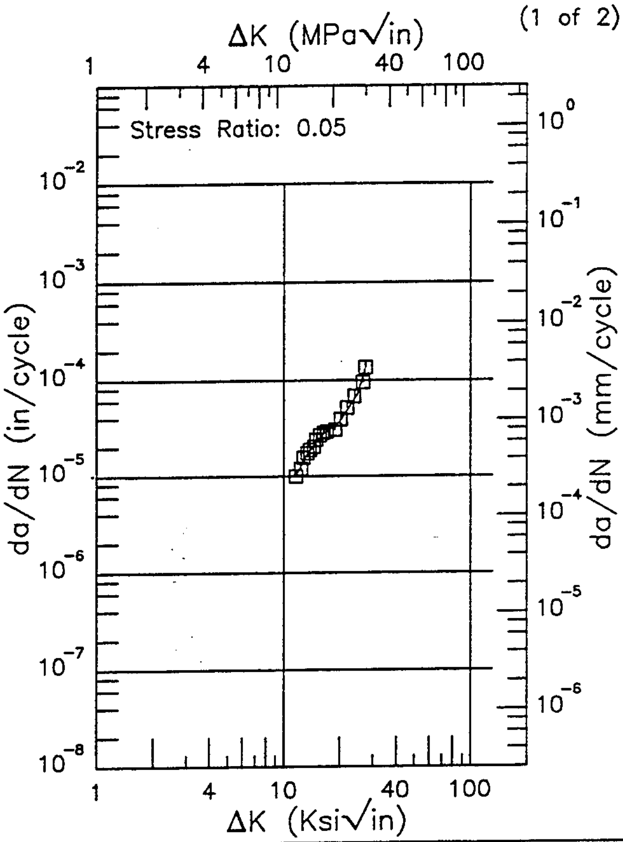
R

7475 (ALCLAD)

Condition/Ht: T61
Form: 0.04 in. Sheet
Specimen Type: CCP (max load specified)
Orientation: L–T
Frequency: 2 Hz
Environment: H.H.A.; RT

Yield Strength: 65.7 ksi
Ult. Strength: 73.6 ksi
Specimen Thk: 0.04 in.
Specimen Width: 23.97 – 24.01 in.
Ref: 86212

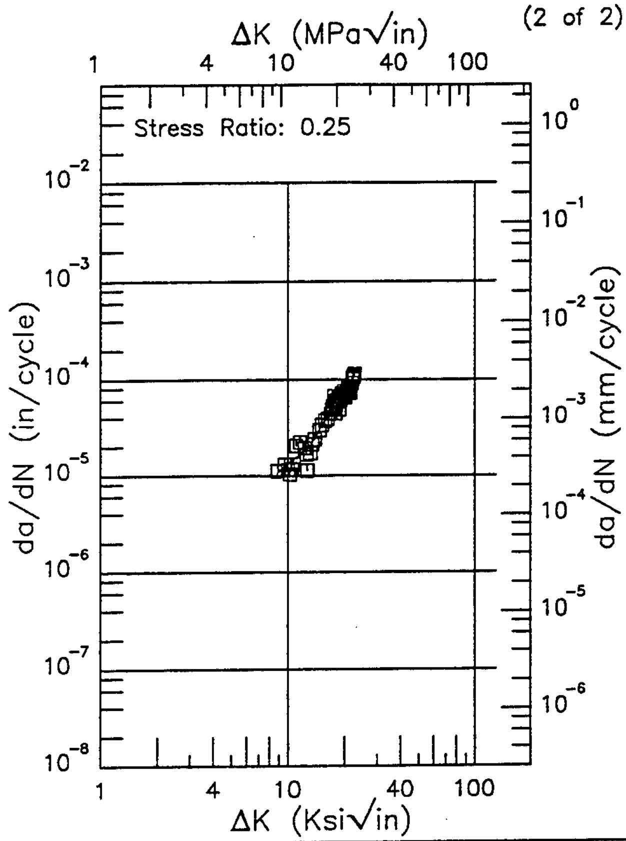
(1 of 2)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
11.50 (min)	9.88
13.	15.7
16.	27.0
20.	37.2
25.	72.5
27.35 (max)	130.

RMS % Error	Life Prediction Ratio Summary
6.09	0. .5 .8 1.25 2.

(2 of 2)



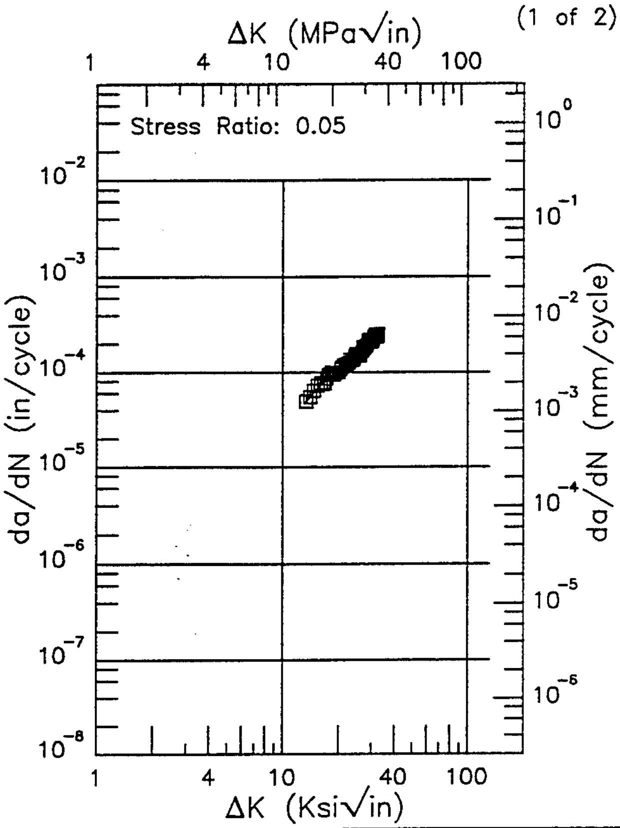
ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
8.78 (min)	10.5
9.	11.1
10.	13.3
13.	19.7
16.	39.1
20.	69.6
22.61 (max)	109.

RMS % Error	Life Prediction Ratio Summary
13.39	0. .5 .8 1.25 2.

Figure 8.20.3.1.3

Condition/Ht: T61
Form: 0.04 in. Sheet
Specimen Type: CCP (max load specified)
Orientation: L-T
Frequency: 2 Hz
Environment: 3.5% NACL; RT

Yield Strength: 68.6 ksi
Ult. Strength: 74.5 ksi
Specimen Thk: 0.04 in.
Specimen Width: 36.03 - 36.04 in.
Ref: 86212

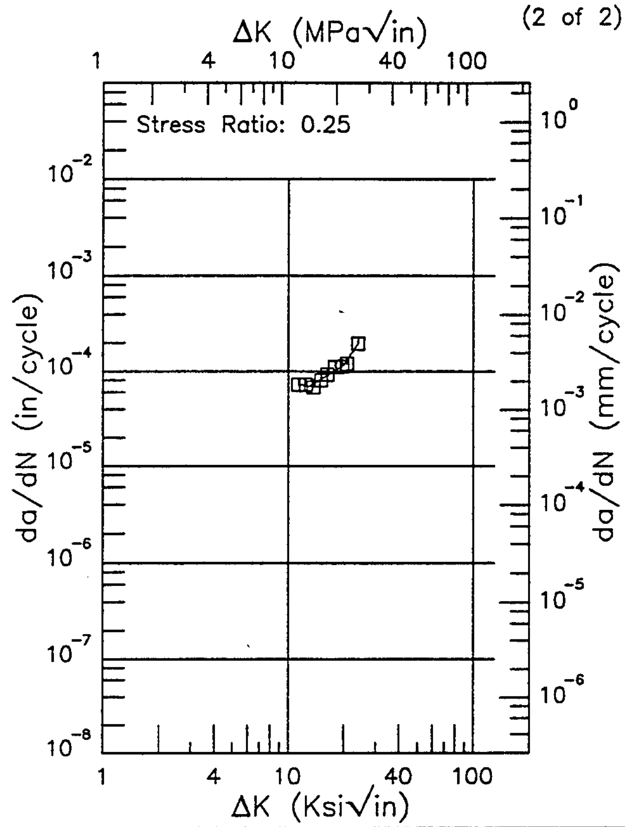


ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
13.24 (min)	47.7
16.	76.1
20.	106.
25.	151.
30.	217.
32.52 (max)	252.

RMS % Error 3.81

Life Prediction Ratio Summary

0. .5 .8 1.25 2.



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
11.34 (min)	73.7
13.	69.4
16.	88.6
20.	117.
23.86 (max)	194.

RMS % Error 5.03

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

Figure 8.20.3.1.4

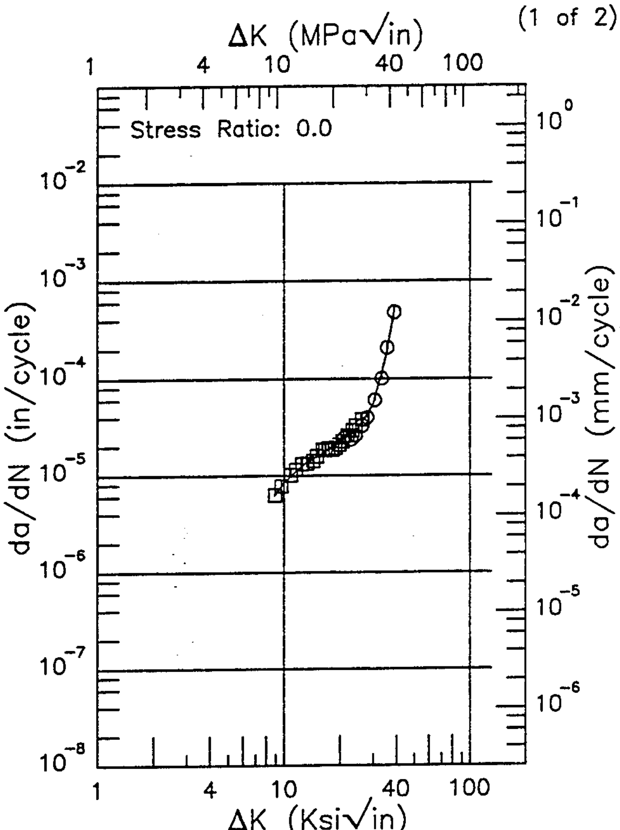
R

7475 (ALCLAD)

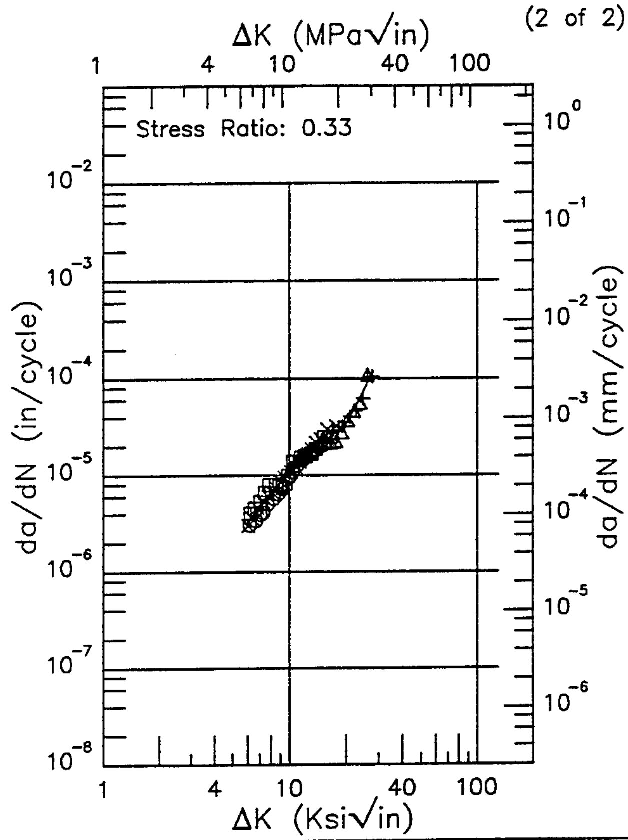
Condition/Ht: T61
Form: 0.09 in. Sheet
Specimen Type: CCP (max load specified)
Orientation: T–L
Frequency: 13.3 Hz
Environment: LAB AIR; RT

Yield Strength: 68.2 ksi
Ult. Strength: 78.6 ksi
Specimen Thk: 0.089 – 0.09 in.
Specimen Width: 4 in.
Ref: 86213

(1 of 2)



(2 of 2)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
8.89 (min)	6.21
9.	6.45
10.	8.56
13.	13.3
16.	16.7
20.	22.0
25.	31.0
30.	54.6
35.	170.
38.72 (max)	487.

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
6.05 (min)	3.40
7.	4.66
8.	6.32
9.	8.28
10.	10.5
13.	17.5
16.	24.1
20.	33.8
25.	75.1
27.65 (max)	116.

RMS % Error
6.50

Life Prediction Ratio Summary
0. .5 .8 1.25 2.

RMS % Error
11.06

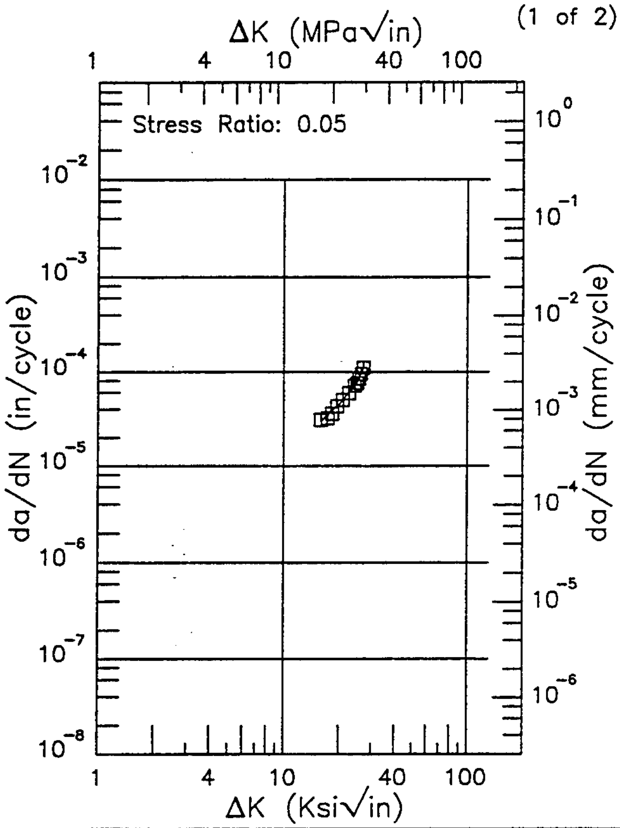
Life Prediction Ratio Summary
0. .5 .8 1.25 2.

Figure 8.20.3.1.5

Condition/Ht: T61
Form: 0.04 in. Sheet
Specimen Type: CCP (max load specified)
Orientation: T–L
Frequency: 2 Hz
Environment: H.H.A.; RT

Yield Strength: 68.6 ksi
Ult. Strength: 74.5 ksi
Specimen Thk: 0.04 in.
Specimen Width: 23.92 – 24.01 in.
Ref: 86212

(1 of 2)



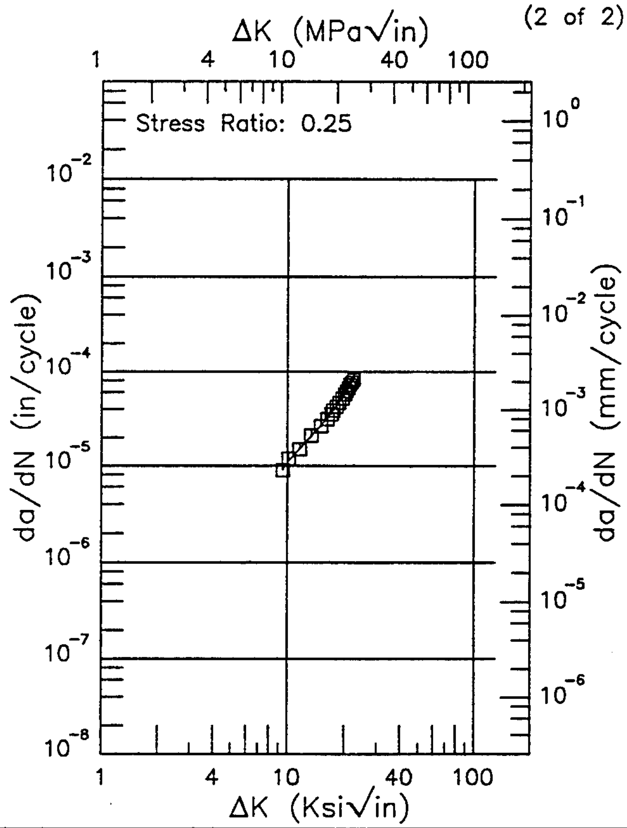
ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
15.82 (min)	30.5
16.	30.3
20.	45.1
25.	77.8
27.02 (max)	111.

RMS % Error: 3.29

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

(2 of 2)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
9.46 (min)	9.31
10.	10.8
13.	19.3
16.	30.2
20.	56.4
22.36 (max)	82.6

RMS % Error: 1.99

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

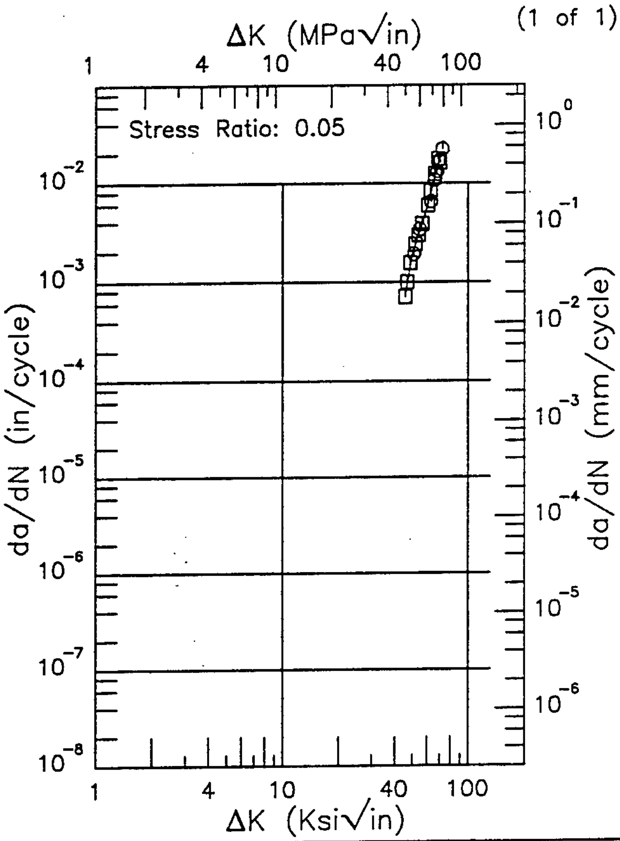
Figure 8.20.3.1.6

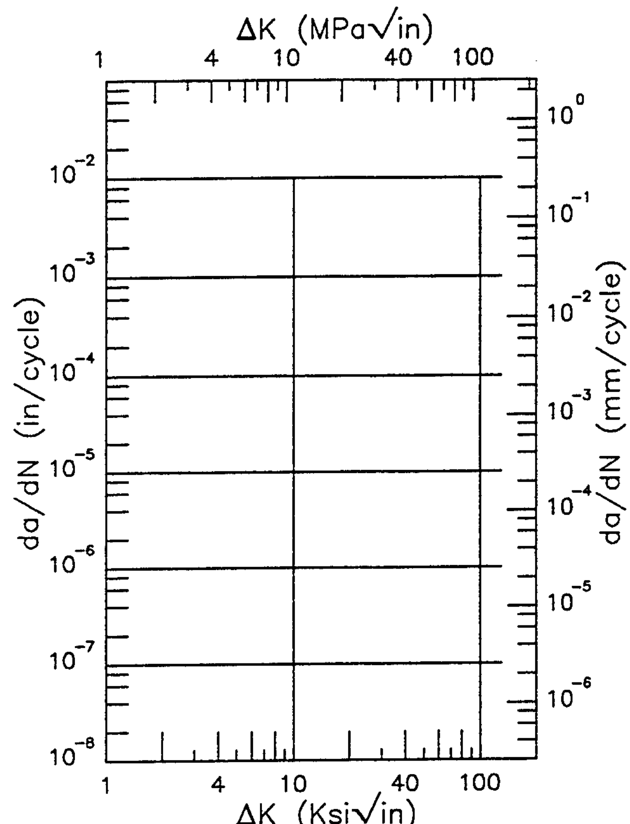
7475 (ALCLAD)

R

Condition/Ht: T61
Form: 0.04 in. Sheet
Specimen Type: CCP (max load specified)
Orientation: T-L
Frequency: 2 Hz
Environment: H.H.A.; RT

Yield Strength: 65.7 – 68.6 ksi
Ult. Strength: 73.6 – 74.5 ksi
Specimen Thk: 0.04 in.
Specimen Width: 12 in.
Ref: 86212





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
45.66 (min)	746.
50.	1877.
60.	5635.
70.	17603.
72.32 (max)	20509.

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error
8.68

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

RMS % Error

Life Prediction Ratio Summary

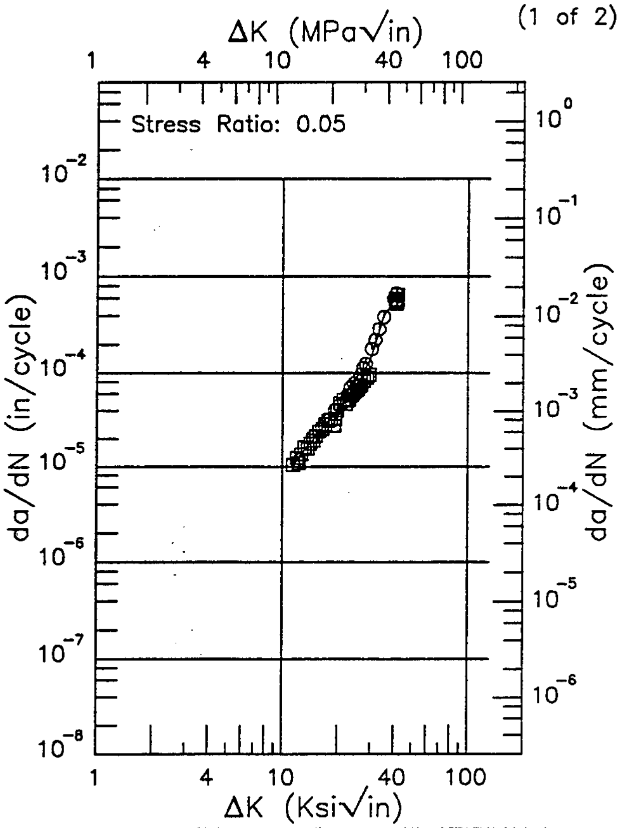
0. .5 .8 1.25 2.

Figure 8.20.3.1.7

Condition/Ht: T61
Form: 0.04 in. Sheet
Specimen Type: CCP (max load specified)
Orientation: T-L
Frequency: 2 Hz
Environment: H.H.A.; RT

Yield Strength: 65.7 – 68.6 ksi
Ult. Strength: 73.6 – 74.5 ksi
Specimen Thk: 0.04 in.
Specimen Width: 35.98 – 36.02 in.
Ref: 86212

(1 of 2)



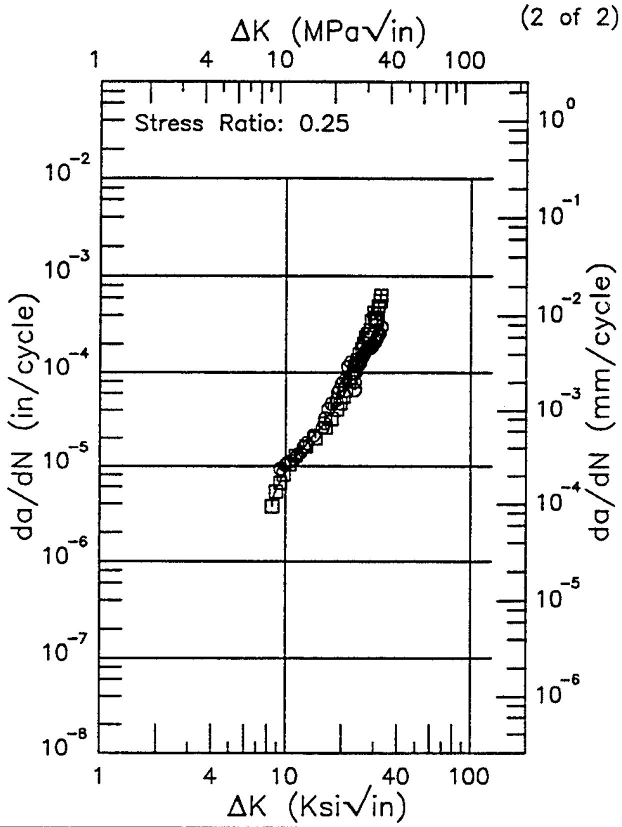
ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
11.39 (min)	10.3
13.	14.6
16.	24.2
20.	40.5
25.	69.6
30.	146.
35.	398.
40.	591.
41.52 (max)	519.

RMS % Error 11.47

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

(2 of 2)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
8.44 (min)	4.19
9.	5.90
10.	9.09
13.	17.5
16.	28.0
20.	62.9
25.	144.
30.	279.
32.55 (max)	481.

RMS % Error 20.63

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

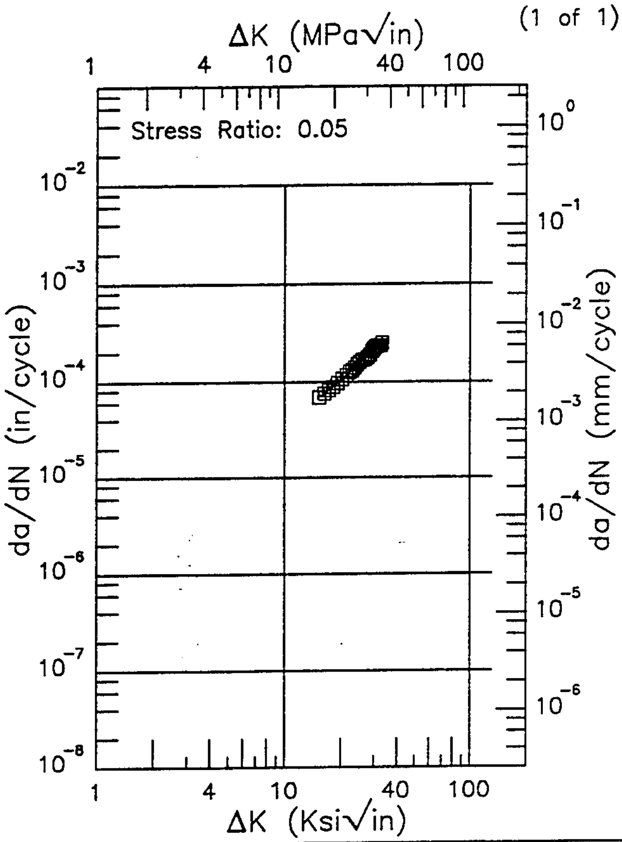
Figure 8.20.3.1.8

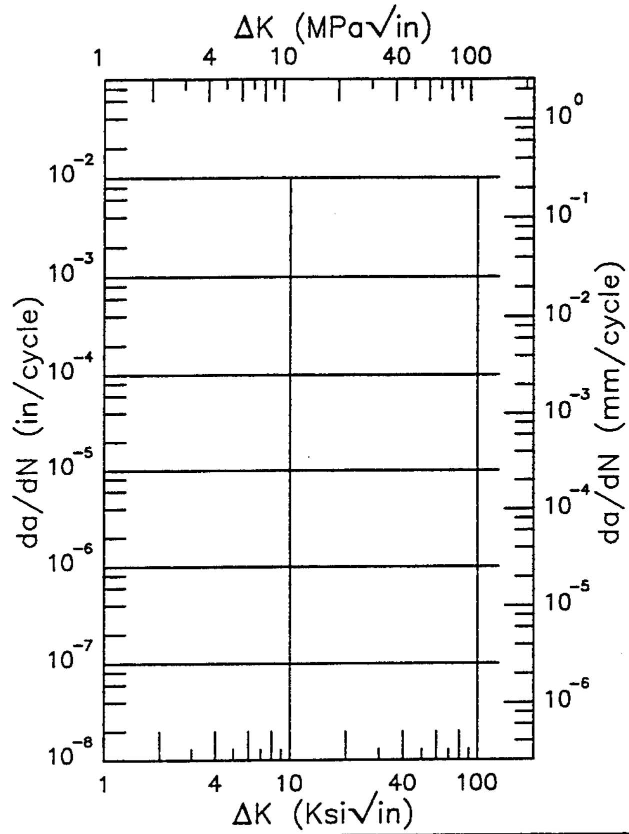
7475 (ALCLAD)

R

Condition/Ht: T61	Yield Strength: 65.7 ksi
Form: 0.04 in. Sheet	Ult. Strength: 73.6 ksi
Specimen Type: CCP (max load specified)	Specimen Thk: 0.04 in.
Orientation: T–L	Specimen Width: 35.8 in.
Frequency: 2 Hz	Ref: 86212
Environment: 3.5% NACL; RT	

(1 of 1)



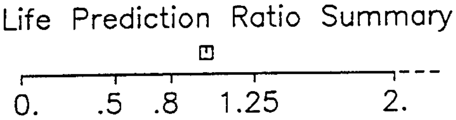


ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
15.18 (min)	69.1
16.	73.7
20.	104.
25.	154.
30.	212.
33.11 (max)	248.

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error 2.07

Life Prediction Ratio Summary



RMS % Error

Life Prediction Ratio Summary

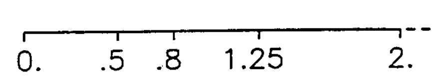
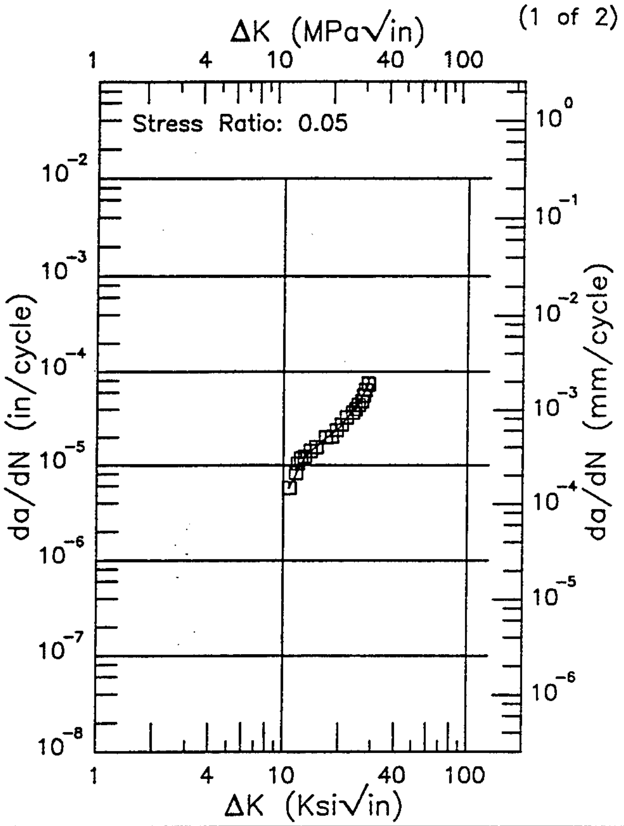


Figure 8.20.3.1.9

7475 (ALCLAD) R

Condition/Ht: T761	Yield Strength: 59.8 ksi
Form: 0.04 in. Sheet	Ult. Strength: 68.7 ksi
Specimen Type: CCP (max load specified)	Specimen Thk: 0.04 in.
Orientation: L–T	Specimen Width: 23.98 – 23.99 in.
Frequency: 2 Hz	Ref: 86212
Environment: H.H.A.; RT	

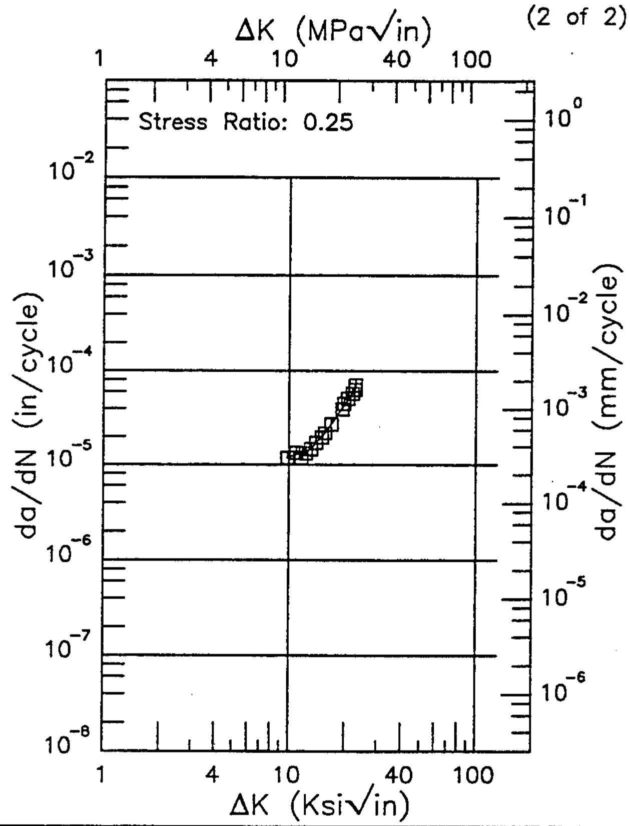
(1 of 2)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
10.65 (min)	5.71
13.	12.2
16.	18.0
20.	25.1
25.	44.0
28.69 (max)	71.9

RMS % Error	Life Prediction Ratio Summary
6.32	0. .5 .8 1.25 2.

(2 of 2)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
9.82 (min)	11.9
10.	12.0
13.	14.4
16.	23.0
20.	44.6
22.74 (max)	64.8

RMS % Error	Life Prediction Ratio Summary
4.39	0. .5 .8 1.25 2.

Figure 8.20.3.1.10

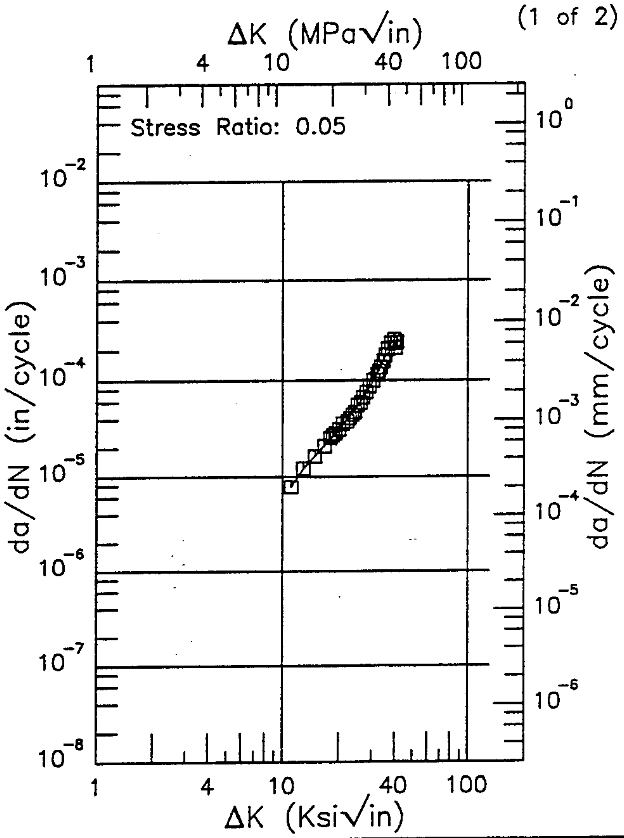
7475 (ALCLAD)

R

Condition/Ht: T761
Form: 0.04 in. Sheet
Specimen Type: CCP (max load specified)
Orientation: L–T
Frequency: 2 Hz
Environment: H.H.A.; RT

Yield Strength: 59.8 ksi
Ult. Strength: 68.7 ksi
Specimen Thk: 0.04 in.
Specimen Width: 36 in.
Ref: 86212

(1 of 2)



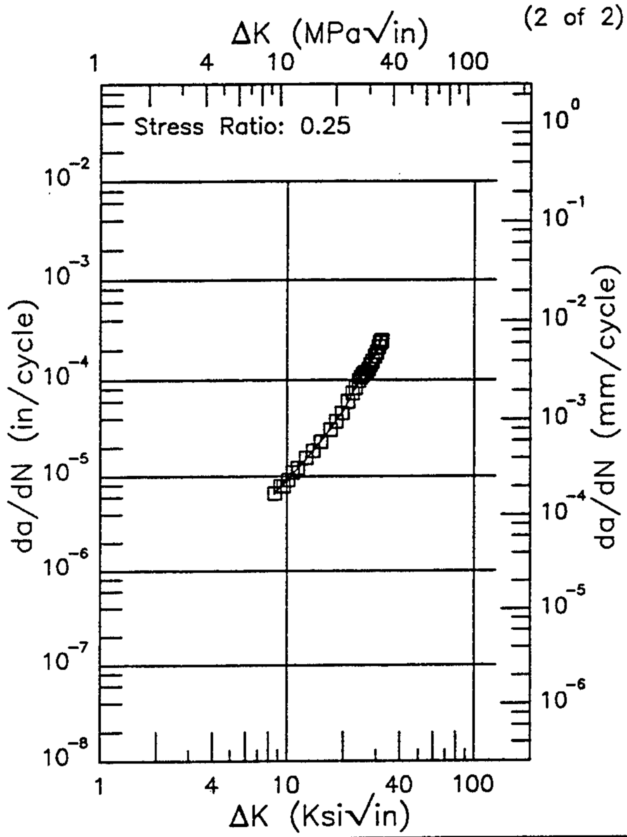
ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
11.08 (min)	7.82
13.	12.2
16.	19.3
20.	30.9
25.	53.3
30.	91.1
35.	169.
40.	239.
40.71 (max)	235.

RMS % Error 4.61

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

(2 of 2)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
8.57 (min)	6.51
9.	7.21
10.	9.02
13.	16.2
16.	26.2
20.	49.1
25.	108.
30.	186.
31.95 (max)	270.

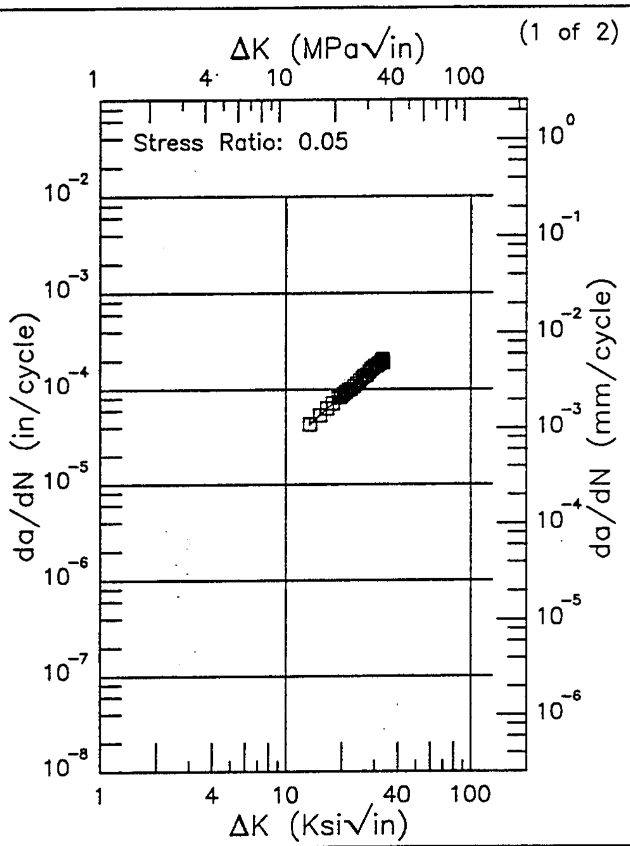
RMS % Error 3.30

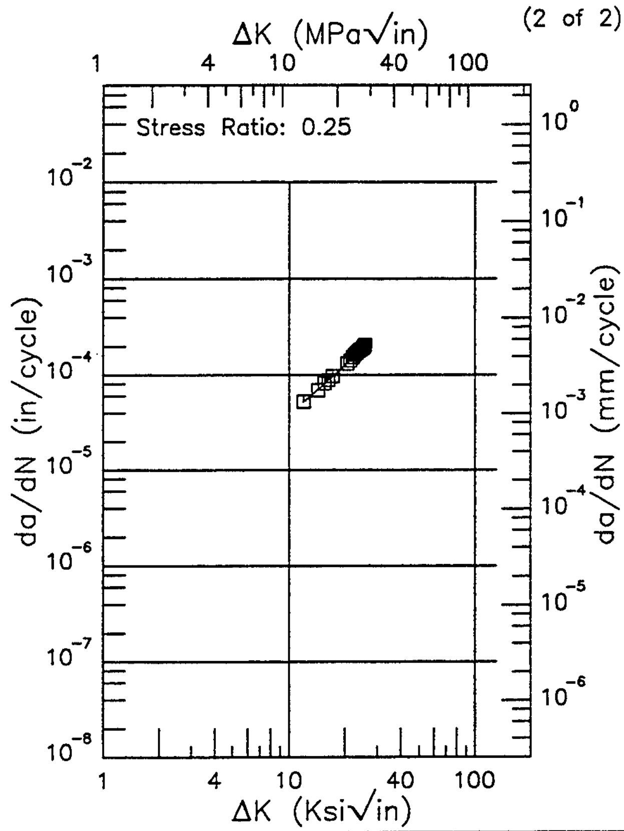
Life Prediction Ratio Summary

0. .5 .8 1.25 2.

Figure 8.20.3.1.11

Condition/Ht: T761	Yield Strength: 59.8 ksi
Form: 0.04 in. Sheet	Ult. Strength: 68.7 ksi
Specimen Type: CCP (max load specified)	Specimen Thk: 0.04 in.
Orientation: L-T	Specimen Width: 35.96 – 36 in.
Frequency: 2 Hz	Ref: 86212
Environment: 3.5% NACL; RT	



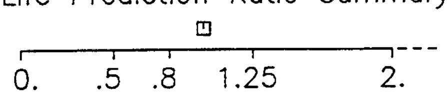


ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)
13.39 (min)	42.7
16.	58.8
20.	86.7
25.	123.
30.	173.
33.27 (max)	198.

ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)
11.95 (min)	51.8
13.	59.4
16.	84.5
20.	126.
25.	194.
25.66 (max)	204.

RMS % Error 1.58

Life Prediction Ratio Summary



RMS % Error 1.18

Life Prediction Ratio Summary

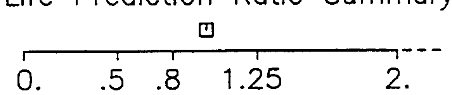


Figure 8.20.3.1.12

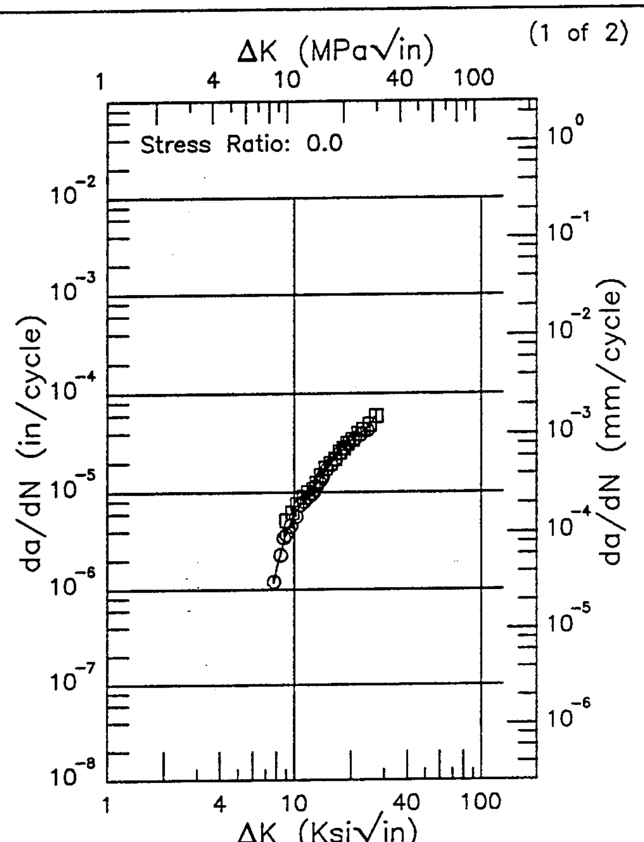
R

7475 (ALCLAD)

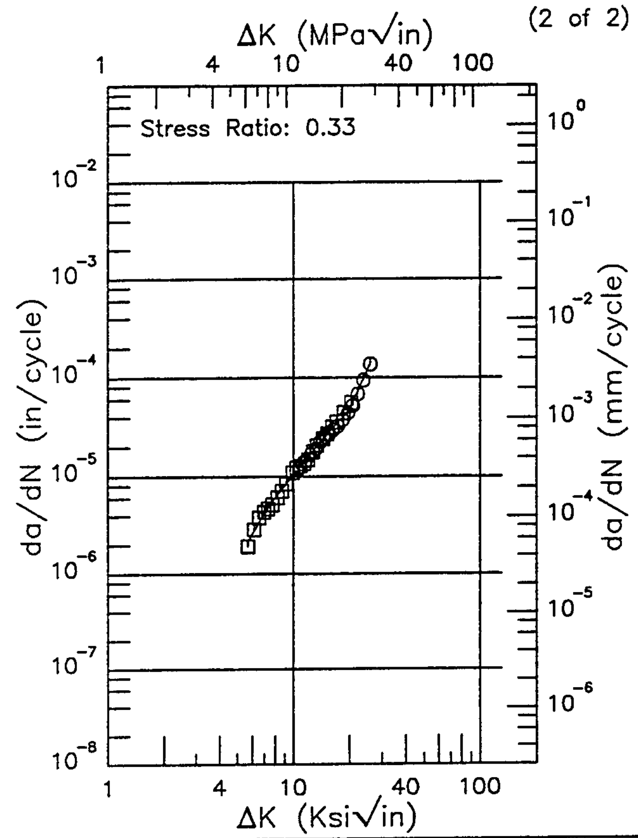
Condition/Ht: T761
Form: 0.09 in. Sheet
Specimen Type: CCP (max load specified)
Orientation: T–L
Frequency: 13.3 Hz
Environment: LAB AIR; RT

Yield Strength: 66 ksi
Ult. Strength: 74.5 ksi
Specimen Thk: 0.09 in.
Specimen Width: 4 in.
Ref: 86213

(1 of 2)



(2 of 2)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
7.75 (min)	1.17
8.	1.60
9.	3.84
10.	6.13
13.	11.6
16.	20.6
20.	32.9
25.	47.0
27.14 (max)	58.5

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
5.67 (min)	2.11
6.	2.60
7.	4.25
8.	6.07
9.	8.06
10.	10.3
13.	19.0
16.	29.7
20.	48.2
25.	118.
25.76 (max)	136.

RMS % Error 7.29

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

RMS % Error 4.88

Life Prediction Ratio Summary

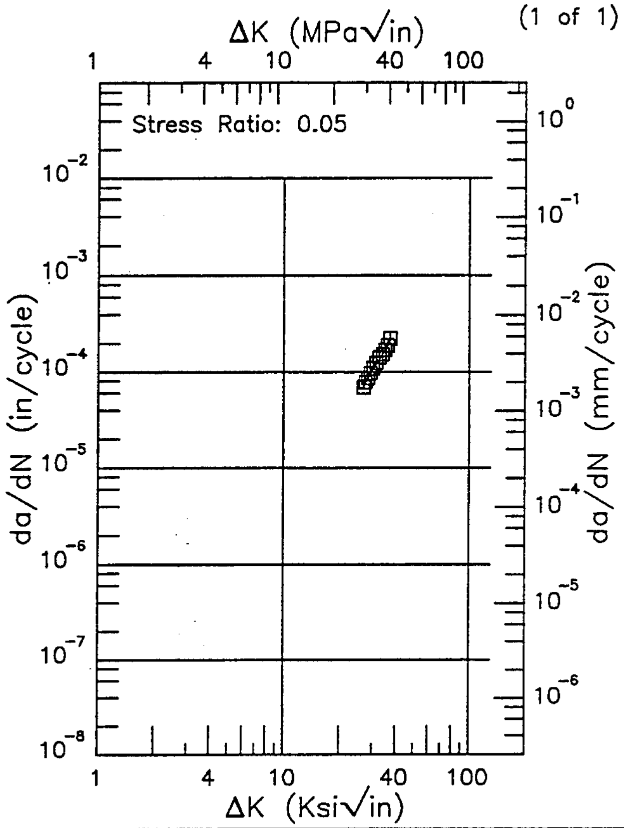
0. .5 .8 1.25 2.

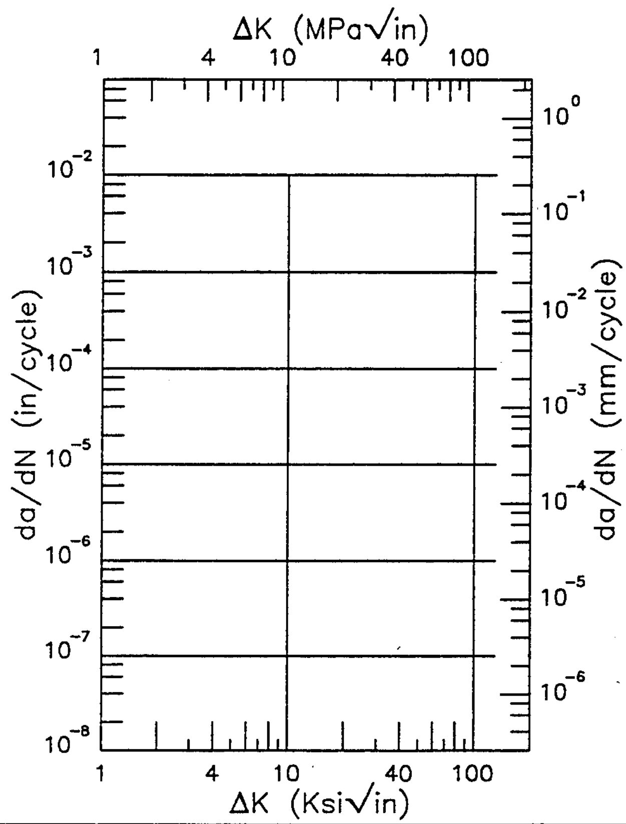
Figure 8.20.3.1.13

Condition/Ht: T761
Form: 0.04 in. Sheet
Specimen Type: CCP (max load specified)
Orientation: T-L
Frequency: 2 Hz
Environment: H.H.A.; RT

Yield Strength: 59.9 ksi
Ult. Strength: 67.3 ksi
Specimen Thk: 0.04 in.
Specimen Width: 23.94 in.
Ref: 86212

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
26.64 (min)	69.3
30.	106.
35.	169.
37.33 (max)	224.

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error
1.46

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

RMS % Error

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

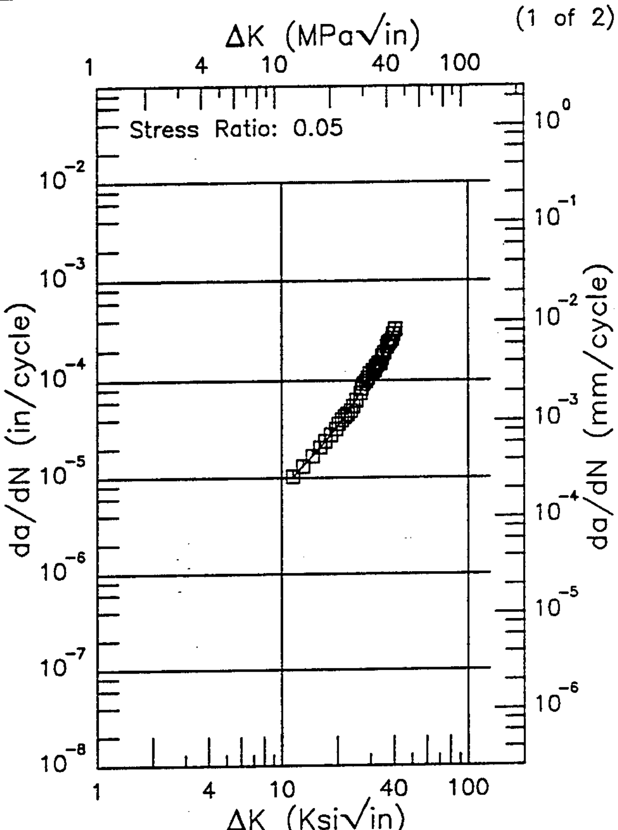
Figure 8.20.3.1.14

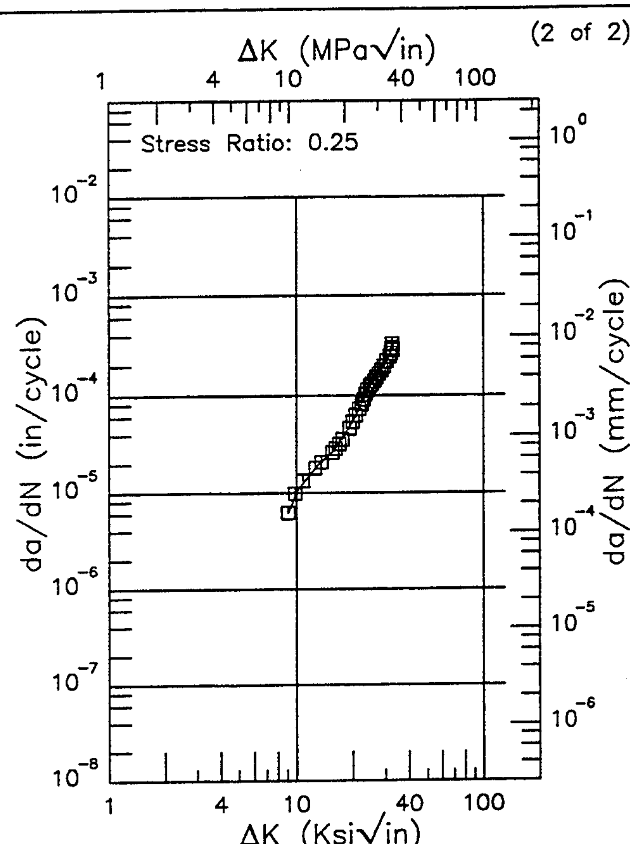
7475 (ALCLAD)

R

Condition/Ht: T761
Form: 0.04 in. Sheet
Specimen Type: CCP (max load specified)
Orientation: T–L
Frequency: 2 Hz
Environment: H.H.A.; RT

Yield Strength: 59.9 ksi
Ult. Strength: 67.3 ksi
Specimen Thk: 0.041 in.
Specimen Width: 36 – 36.02 in.
Ref: 86212





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
11.47 (min)	10.2
13.	13.1
16.	20.4
20.	34.2
25.	62.8
30.	114.
35.	181.
40.	309.
40.45 (max)	331.

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
9.01 (min)	6.17
10.	10.3
13.	19.2
16.	27.9
20.	54.6
25.	127.
30.	208.
32.68 (max)	313.

RMS % Error	Life Prediction Ratio Summary
3.48	0. .5 .8 1.25 2.

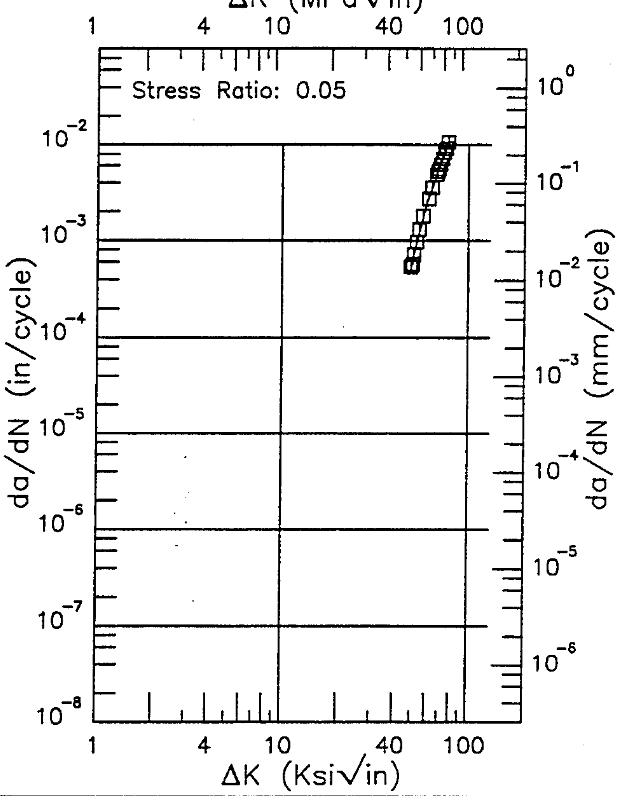
RMS % Error	Life Prediction Ratio Summary
3.29	0. .5 .8 1.25 2.

Figure 8.20.3.1.15

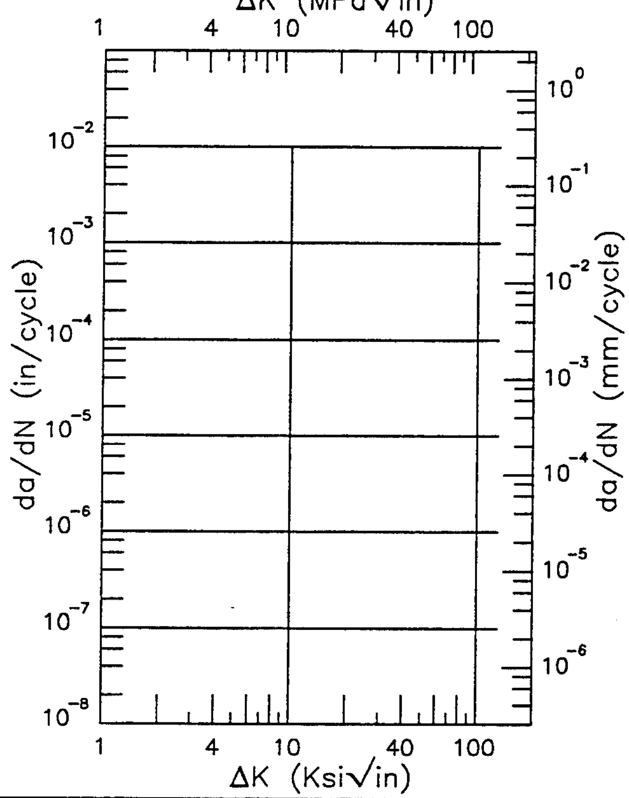
Condition/Ht: T761
Form: 0.04 in. Sheet
Specimen Type: CCP (max load specified)
Orientation: T-L
Frequency: 2 Hz
Environment: H.H.A.; RT

Yield Strength: 59.9 ksi
Ult. Strength: 67.3 ksi
Specimen Thk: 0.04 in.
Specimen Width: 12 in.
Ref: 86212

(1 of 1)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
49.02 (min)	493.
50.	603.
60.	2504.
70.	6068.
77.48 (max)	10397.



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error	Life Prediction Ratio Summary
5.07	0. .5 .8 1.25 2.

RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

Figure 8.20.3.1.16

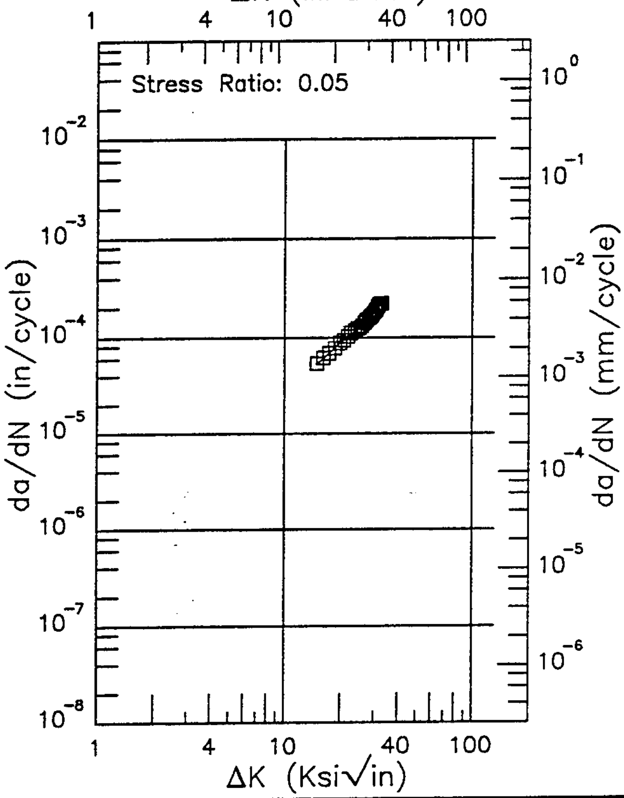
R

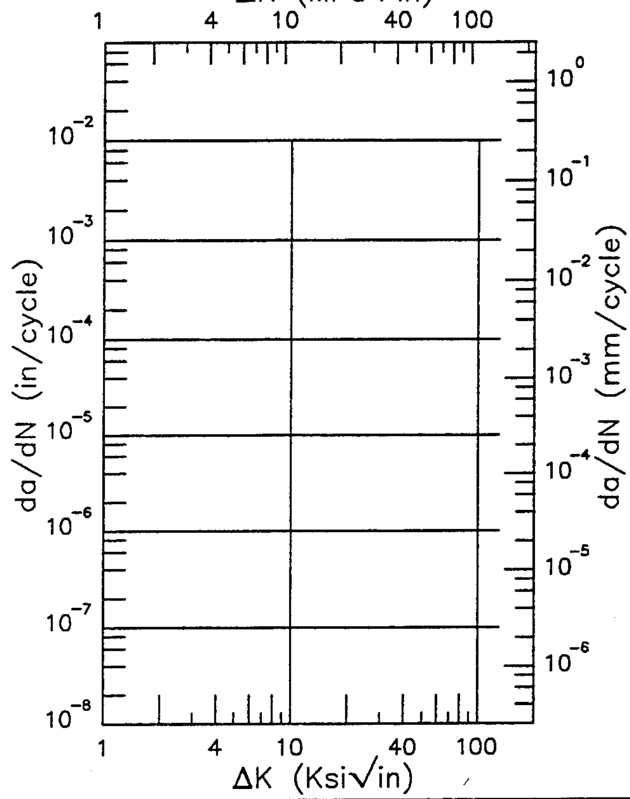
7475 (ALCLAD)

Condition/Ht: T761
Form: 0.04 in. Sheet
Specimen Type: CCP (max load specified)
Orientation: T–L
Frequency: 2 Hz
Environment: 3.5% NACL; RT

Yield Strength: 59.9 ksi
Ult. Strength: 67.3 ksi
Specimen Thk: 0.04 in.
Specimen Width: 35.99 in.
Ref: 86212

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
14.79 (min)	53.7
16.	60.5
20.	90.2
25.	127.
30.	184.
32.79 (max)	229.

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error	Life Prediction Ratio Summary
1.62	0. .5 .8 1.25 2.

RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

Figure 8.20.3.1.17

TABLE 8.21.1.2

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF STRESS INTENSITY FACTOR ΔK 8009 AT ROOM TEMPERATURE

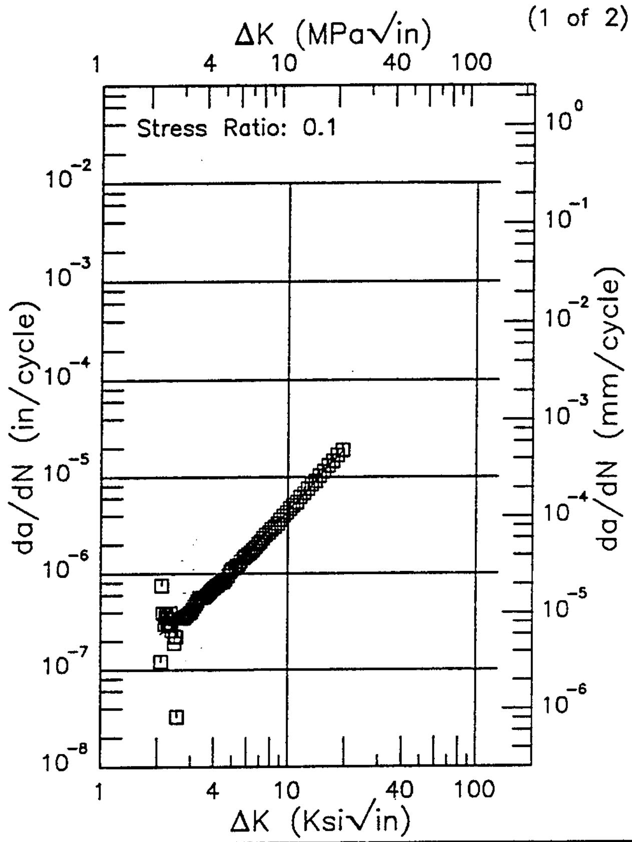
ORIENTATION: L-T **ENVIRONMENT: Lab Air**

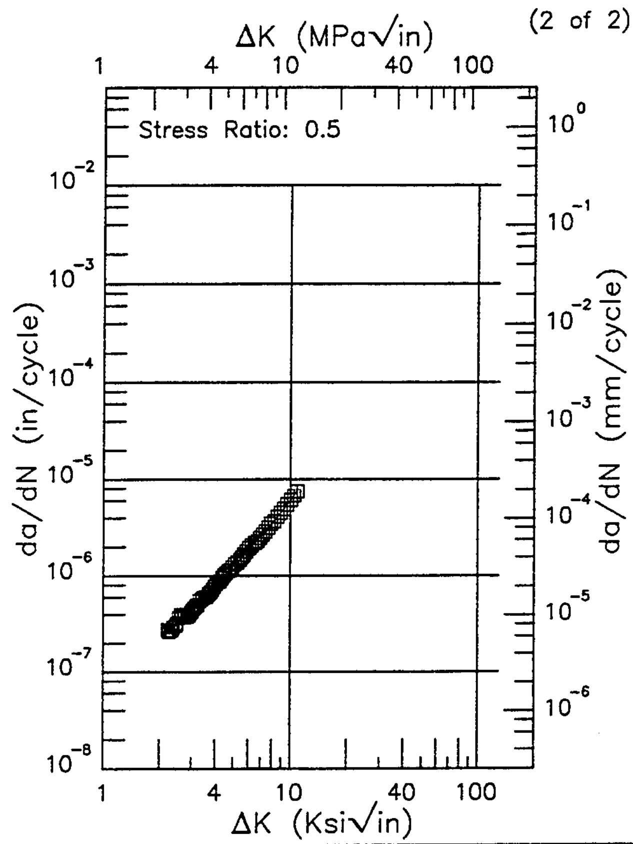
CONDITION/ HEAT TREATMENT	PRODUCT FORM	R	FREQ (Hz)	*FCGR* (10^{-6} *in/cycle*) ΔK *Level* (*Ksi√in*)					
				2.5	5.0	10.0	20.0	50.0	100.0
UNSPECIFIED	SHEET	0.1	5	0.29	1.05	4.43			
		0.5	5	0.32	1.25	6.05			

R 8009

Condition/Ht: UNSPECIFIED
Form: 0.09 in. Sheet
Specimen Type: CT
Orientation: L–T
Frequency: 5 Hz
Environment: LAB AIR; RT

Yield Strength: 60 ksi
Ult. Strength: 62 ksi
Specimen Thk: 0.089 in.
Specimen Width: 1.5 in.
Ref: UD011





ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)
2.08 (min)	0.241
2.5	0.289
3.	0.376
3.5	0.495
4.	0.647
5.	1.05
6.	1.57
7.	2.20
8.	2.89
9.	3.63
10.	4.43
13.	7.59
16.	12.6
19.44 (max)	18.5

ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)
2.20 (min)	0.261
2.5	0.321
3.	0.445
3.5	0.600
4.	0.786
5.	1.25
6.	1.85
7.	2.58
8.	3.47
9.	4.62
10.	6.05
10.90 (max)	7.44

RMS % Error 29.83

Life Prediction Ratio Summary
0. .5 .8 1.25 2.

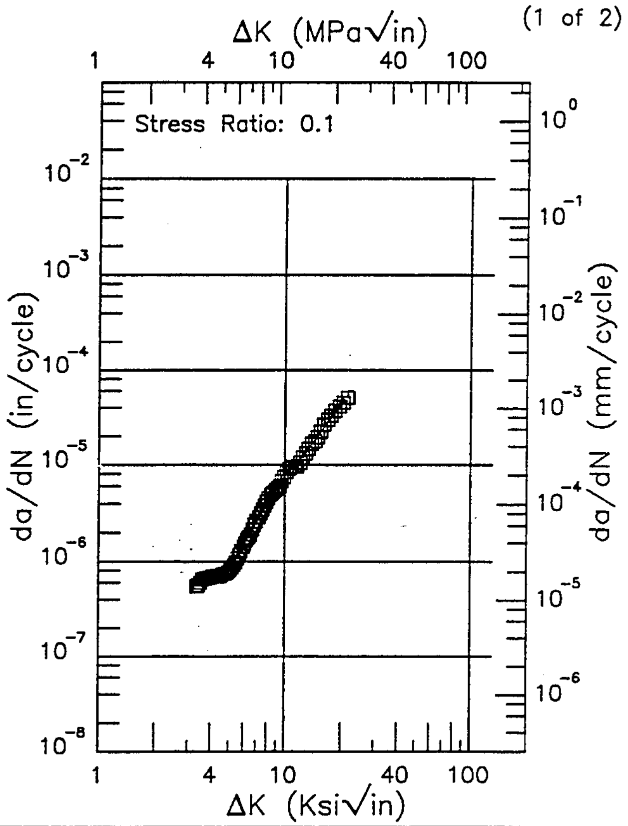
RMS % Error 3.50

Life Prediction Ratio Summary
0. .5 .8 1.25 2.

Figure 8.21.3.1.1

Condition/Ht: UNSPECIFIED
Form: 0.09 in. Sheet
Specimen Type: CT
Orientation: L-T
Frequency: 5 Hz
Environment: LAB AIR;400°F

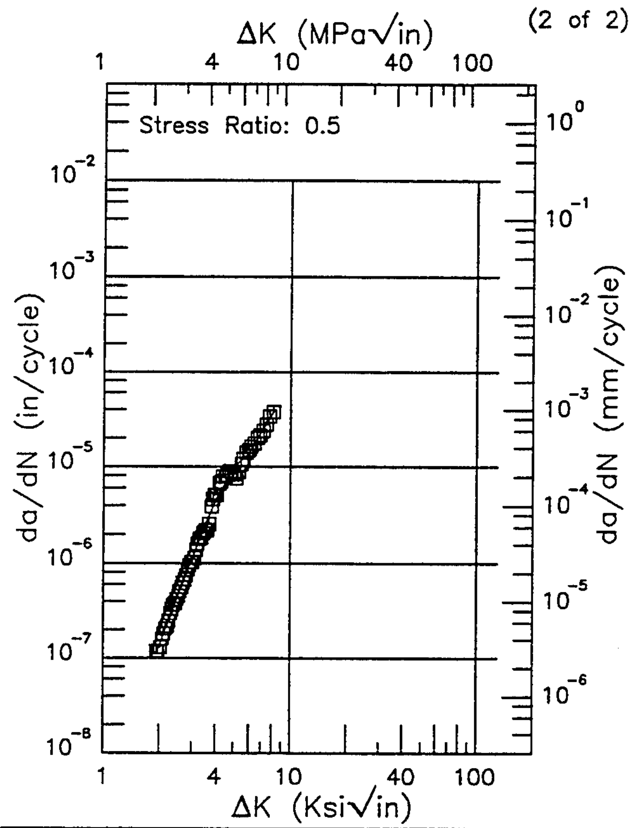
Yield Strength: 39 ksi
Ult. Strength: 42 ksi
Specimen Thk: 0.089 in.
Specimen Width: 1.5 – 1.502 in.
Ref: UD011



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
3.32 (min)	0.676
3.5	0.628
4.	0.612
5.	0.870
6.	1.48
7.	2.51
8.	3.97
9.	5.76
10.	7.62
13.	13.6
16.	24.1
20.	44.9
21.42 (max)	47.0

RMS % Error: 6.46

Life Prediction Ratio Summary: 0. .5 .8 1.25 2.



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
1.93 (min)	0.111
2.	0.132
2.5	0.431
3.	1.11
3.5	2.41
4.	4.52
5.	9.83
6.	13.8
7.	23.0
8.	35.7
8.06 (max)	36.1

RMS % Error: 10.86

Life Prediction Ratio Summary: 0. .5 .8 1.25 2.

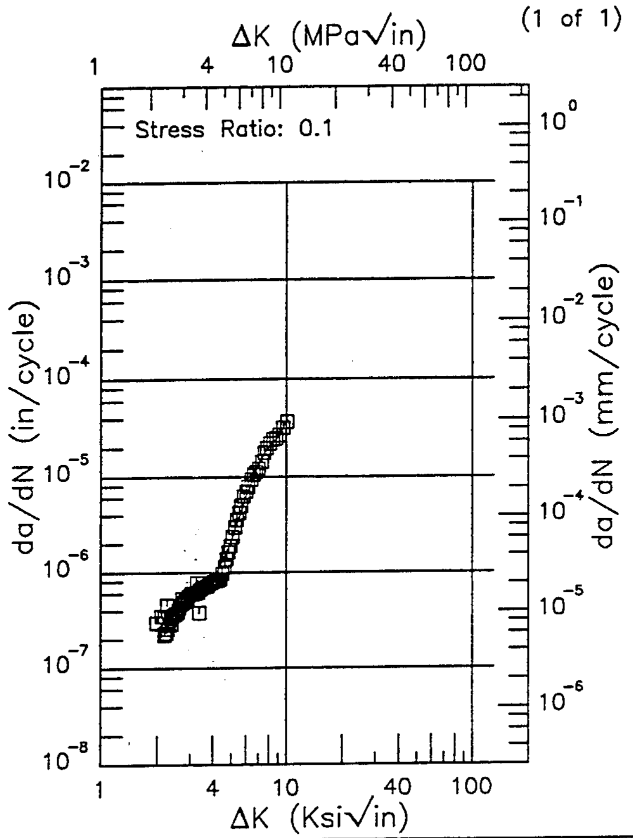
Figure 8.21.3.1.2

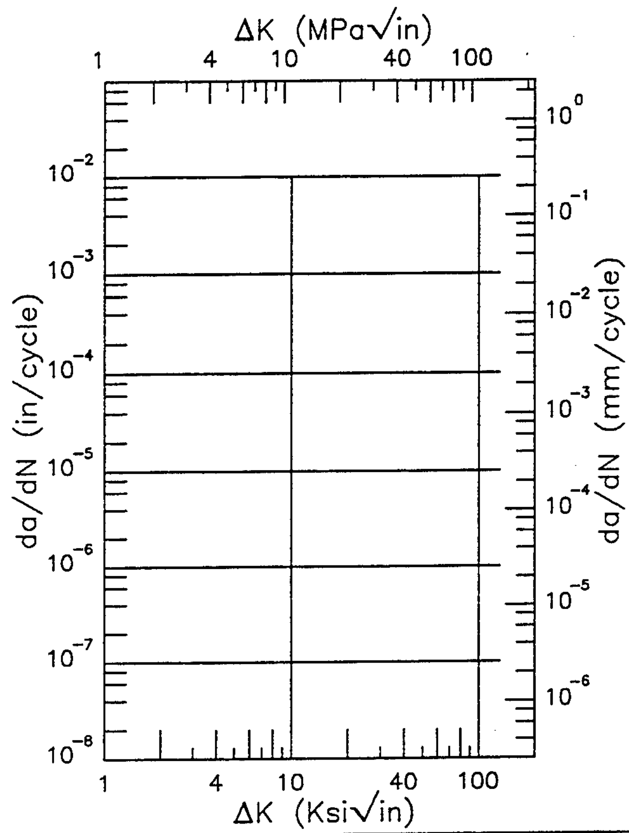
R 8009

Condition/Ht: UNSPECIFIED
Form: 0.09 in. Sheet
Specimen Type: CT
Orientation: L–T
Frequency: 5 Hz
Environment: LAB AIR;600°F

Yield Strength: 31 ksi
Ult. Strength: 42 ksi
Specimen Thk: 0.088 in.
Specimen Width: 1.498 in.
Ref: UD011

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)
1.97 (min)	0.246
2.	0.260
2.5	0.410
3.	0.502
3.5	0.614
4.	0.823
5.	2.09
6.	6.23
7.	13.9
8.	20.6
9.	26.1
10.	37.6
10.01 (max)	37.8

ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)

RMS % Error	Life Prediction Ratio Summary
14.84	0. .5 .8 1.25 2.

RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

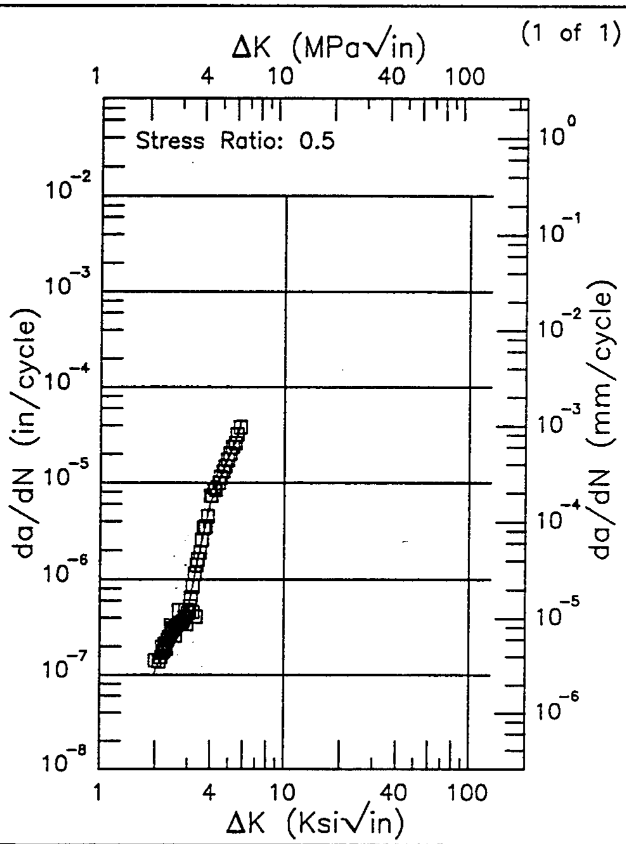
Figure 8.21.3.1.3

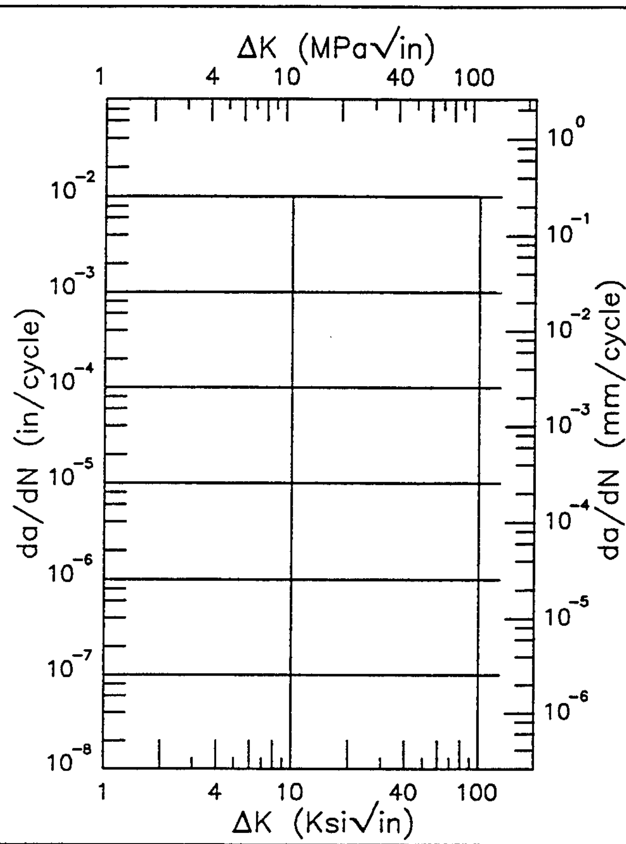
R

Condition/Ht: UNSPECIFIED
Form: 0.09 in. Sheet
Specimen Type: CT
Orientation: L-T
Frequency: 5 Hz
Environment: LAB AIR;600°F

Yield Strength: 31 ksi
Ult. Strength: 42 ksi
Specimen Thk: 0.089 in.
Specimen Width: 2.002 in.
Ref: UD011

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
1.99 (min)	0.105
2.	0.112
2.5	0.269
3.	0.493
3.5	2.01
4.	6.40
5.	18.7
5.75 (max)	38.5

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error	Life Prediction Ratio Summary
17.06	0. .5 .8 1.25 2.

RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

Figure 8.21.3.1.4

TABLE 8.22.1.1

MEAN PLANE STRAIN FRACTURE TOUGHNESS FOR ALUMINUM 7000/8000 SERIES ALLOY 8090 AT ROOM TEMPERATURE

Product Form	Condition/Heat Treatment	K_{Ic} $(ksi\sqrt{in})$								
		Specimen Orientation								
		L-T			T-L			S-L		
		Mean K_{Ic}	Std Dev	n	Mean K_{Ic}	Std Dev	n	Mean K_{Ic}	Std Dev	n
Extrusion	T651	20.4	5.9	5	---	---	---	---	---	---

TABLE 8.22.1.2.1

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF STRESS INTENSITY FACTOR ΔK 8090 AT ROOM TEMPERATURE

ORIENTATION: L-T **ENVIRONMENT: H.H.A.**

CONDITION/ HEAT TREATMENT	PRODUCT FORM	R	FREQ (Hz)	*FCGR* (10^{-6} *in/cycle*)					
				ΔK *Level* (*Ksi√in*)					
				2.5	5.0	10.0	20.0	50.0	100.0
T651	EXTRUSION	0.1	10			1.8	19.32		
		0.1	25			5.24	24.63		
T8; 338F 24HRS	EXTRUSION	0.	8			2.85	9.35		
		0.5	10			4.58	23.55		

TABLE 8.22.1.2.2

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF STRESS INTENSITY FACTOR ΔK 8090 AT ROOM TEMPERATURE

ORIENTATION: L-T **ENVIRONMENT: Lab Air**

CONDITION/ HEAT TREATMENT	PRODUCT FORM	R	FREQ (Hz)	*FCGR* (10^{-6} *in/cycle*)					
				ΔK *Level* (*Ksi√in*)					
				2.5	5.0	10.0	20.0	50.0	100.0
T651	EXTRUSION	0.1	25			0.85	17.86		
		0.33	25		0.27	1.86	34.84		

TABLE 8.22.1.2.3

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF STRESS INTENSITY FACTOR ΔK 8090 AT ROOM TEMPERATURE

ORIENTATION: T-L **ENVIRONMENT: H.H.A.**

CONDITION/ HEAT TREATMENT	PRODUCT FORM	R	FREQ (Hz)	*FCGR* (10^{-6} *in/cycle*)					
				ΔK Level (*Ksi√in*)					
				2.5	5.0	10.0	20.0	50.0	100.0
T651	EXTRUSION	0.1	10		0.55	6.9			
		0.1	25		0.37	8.06			
T8; 338F 24HRS	EXTRUSION	0.	8			6.43			
		0.5	10		1.31				

TABLE 8.22.1.2.4

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF STRESS INTENSITY FACTOR ΔK 8090 AT ROOM TEMPERATURE

ORIENTATION: T-L **ENVIRONMENT: Lab Air**

CONDITION/ HEAT TREATMENT	PRODUCT FORM	R	FREQ (Hz)	*FCGR* (10^{-6} *in/cycle*)					
				ΔK *Level* ($Ksi\sqrt{in}$)					
				2.5	5.0	10.0	20.0	50.0	100.0
T651	EXTRUSION	0.1	25		0.25	0.34			
		0.33	25		0.49	5.12			

TABLE 8.22.2.1

ALUMINUM 8090 K_{Ic}

CONDITION	PRODUCT		TEST TEMP (F)	SPEC OR	YIELD STR (Ksi)	SPECIMEN			CRACK LENGTH (in.) A	2.5 * $(K_{Ic}/TYS)^2$ (in.)	K_{Ic}			DATE	REFER
	FORM	THICK (in.)				WIDTH (in.) W	THICK (in.) B	DESIGN			K_{Ic} (Ksi * $\sqrt{in.}$)	K_{Ic} MEAN	STAN DEV		
T651	Extrusion	1.00	R.T.	L-T	58.0	3.004	0.251	CT	---	0.57	27.70	20.4	5.9	1990	WL003
		1.00			59.6	1.991	0.291	CT	---	0.47	25.80			1990	WL003
		1.00			64.1	1.992	0.291	CT	---	0.16	16.30			1990	WL003
		1.00			64.1	1.992	0.292	CT	---	0.15	15.90			1990	WL003
		1.00			64.1	1.992	0.291	CT	---	0.16	16.10			1990	WL003
T651	Extrusion	1.00	R.T.	T-L	68.7	3.006	0.254	CT	---	0.12	15.10	---	---	1990	WL003
T8; 338F 24HRS	Extrusion	1.00	R.T.	T-L	68.7	2.507	0.255	CT	---	0.11	14.60	---	---	1990	WL003

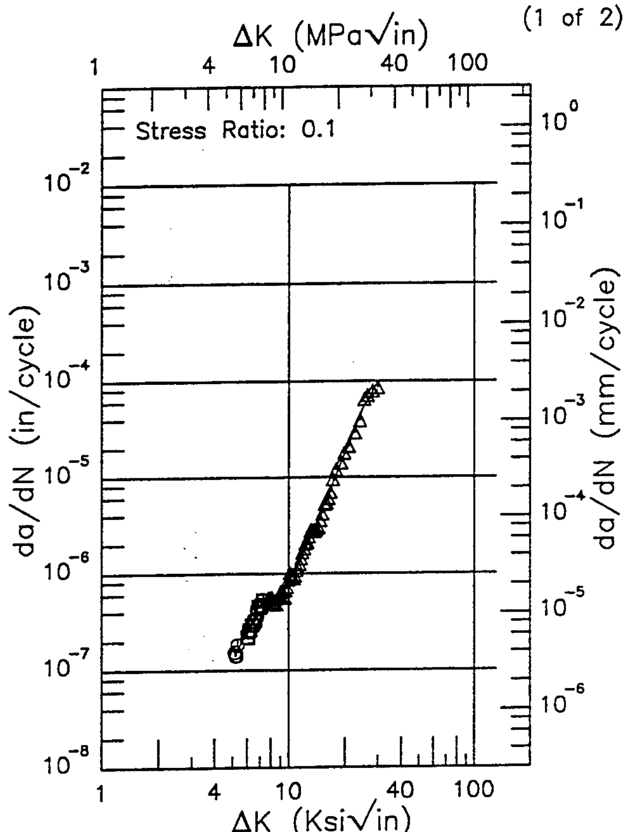
R

8090

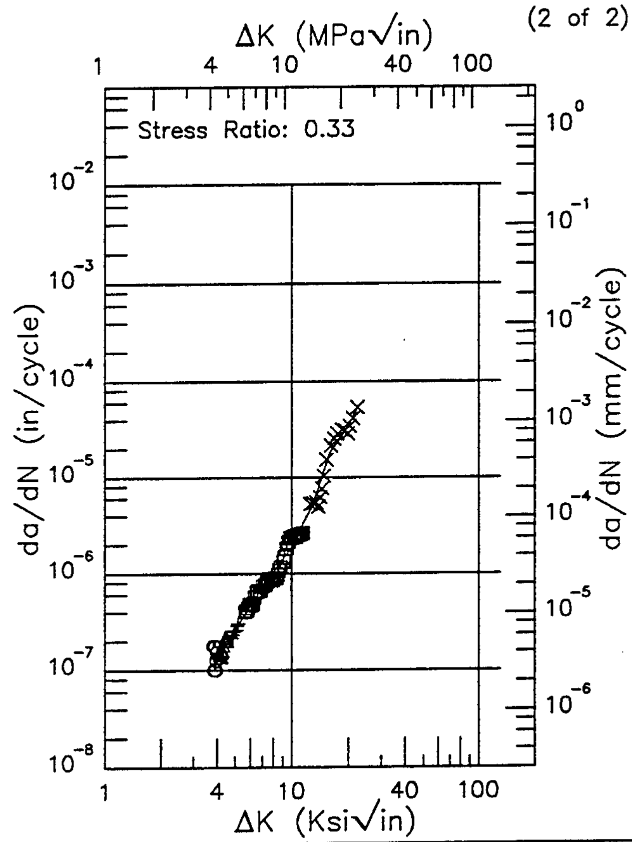
Condition/Ht: T651
Form: 1 in. Extrusion
Specimen Type: CT
Orientation: L–T
Frequency: 25 Hz
Environment: LAB AIR; RT

Yield Strength: 54.6 ksi
Ult. Strength: 68.4 ksi
Specimen Thk: 0.291 in.
Specimen Width: 1.991 – 1.995 in.
Ref: WL003

(1 of 2)



(2 of 2)

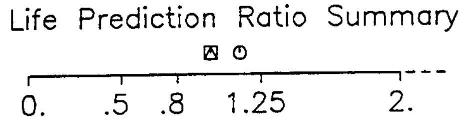


ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
5.11 (min)	0.139
6.	0.260
7.	0.392
8.	0.518
9.	0.661
10.	0.853
13.	2.27
16.	6.34
20.	17.9
25.	53.9
29.80 (max)	81.3

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
3.81 (min)	0.124
4.	0.142
5.	0.268
6.	0.458
7.	0.715
8.	1.03
9.	1.40
10.	1.86
13.	5.29
16.	18.2
20.	34.8
22.15 (max)	52.5

RMS % Error 11.80

Life Prediction Ratio Summary



RMS % Error 13.84

Life Prediction Ratio Summary

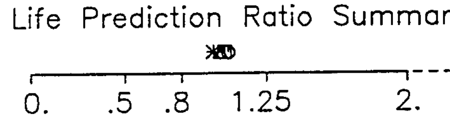
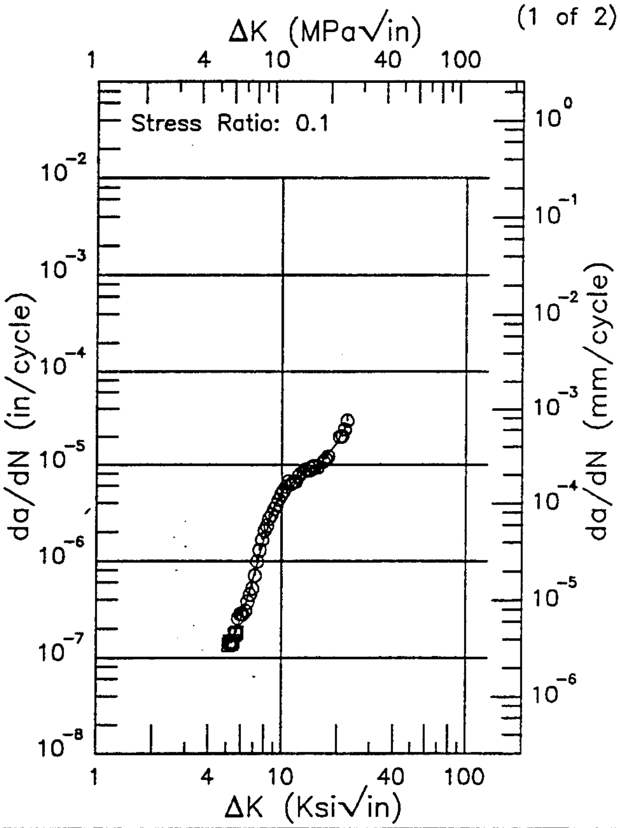
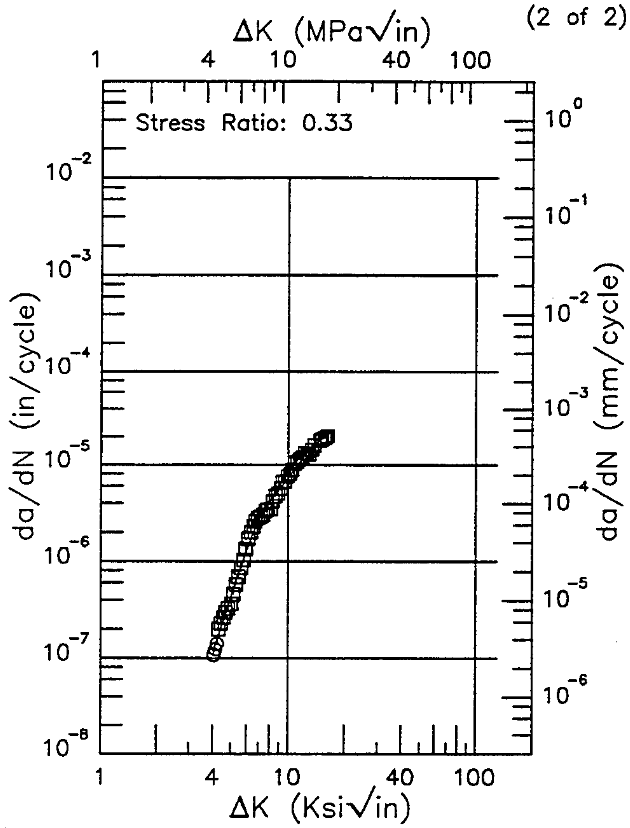


Figure 8.22.3.1.1

Condition/Ht: T651
Form: 1 in. Extrusion
Specimen Type: CT
Orientation: L–T
Frequency:
Environment: H.H.A.;83°F –85°F

Yield Strength: 57.9 ksi
Ult. Strength: 70.5 ksi
Specimen Thk: 0.233 – 0.235 in.
Specimen Width: 2 in.
Ref: WL003





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
5.12 (min)	0.132
6.	0.251
7.	0.672
8.	1.68
9.	3.39
10.	5.24
13.	7.99
16.	10.1
20.	17.5
22.42 (max)	28.0

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
4.03 (min)	0.117
5.	0.436
6.	1.29
7.	2.69
8.	4.15
9.	5.56
10.	7.27
13.	14.9
16.	20.5
16.11 (max)	21.0

RMS % Error	Life Prediction Ratio Summary
8.86	0. .5 .8 1.25 2.

RMS % Error	Life Prediction Ratio Summary
9.41	0. .5 .8 1.25 2.

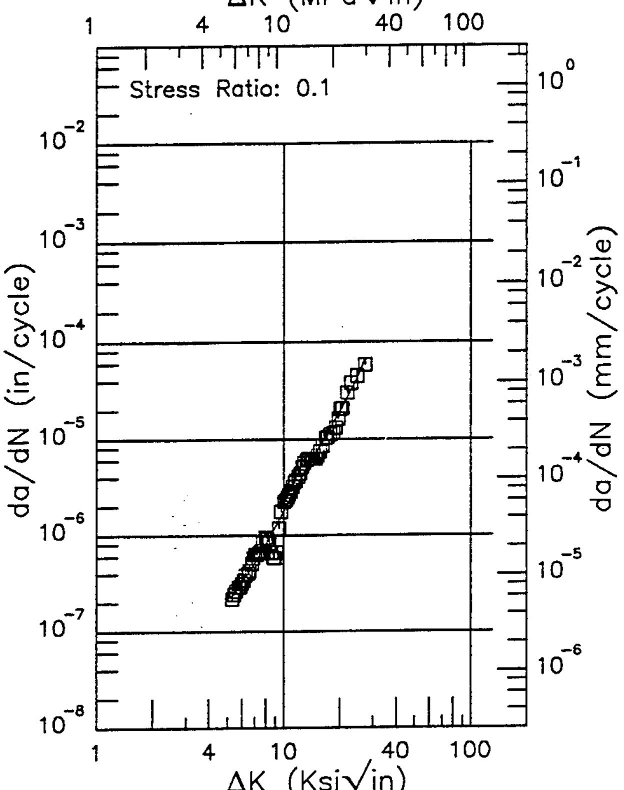
Figure 8.22.3.1.2

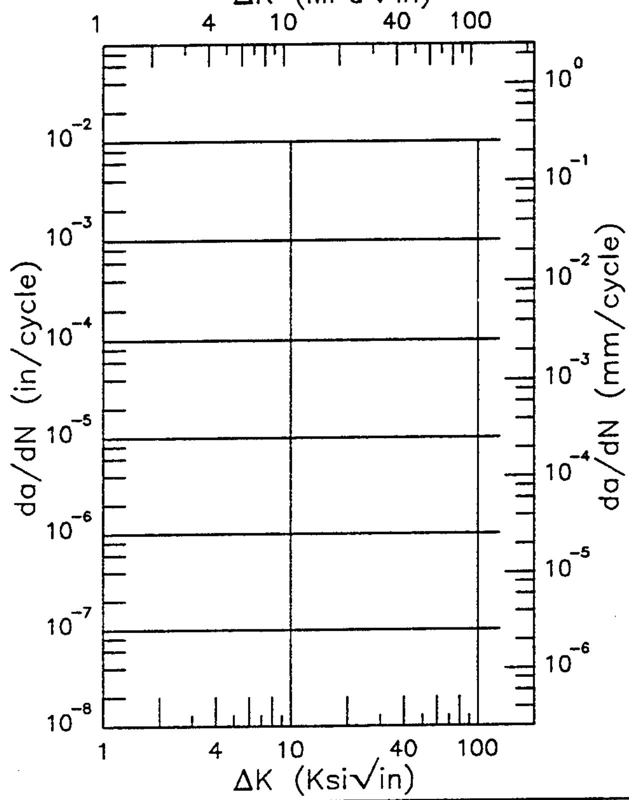
R 8090

Condition/Ht: T651
Form: 1 in. Extrusion
Specimen Type: CT
Orientation: L–T
Frequency: 10 Hz
Environment: H.H.A.; RT

Yield Strength: 58 ksi
Ult. Strength: 68.2 ksi
Specimen Thk: 0.251 in.
Specimen Width: 3.004 in.
Ref: WL003

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)
5.31 (min)	0.231
6.	0.320
7.	0.512
8.	0.803
9.	1.22
10.	1.80
13.	4.69
16.	9.54
20.	19.3
25.	45.3
27.08 (max)	67.0

ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)

RMS % Error	Life Prediction Ratio Summary
18.43	0. .5 .8 1.25 2.

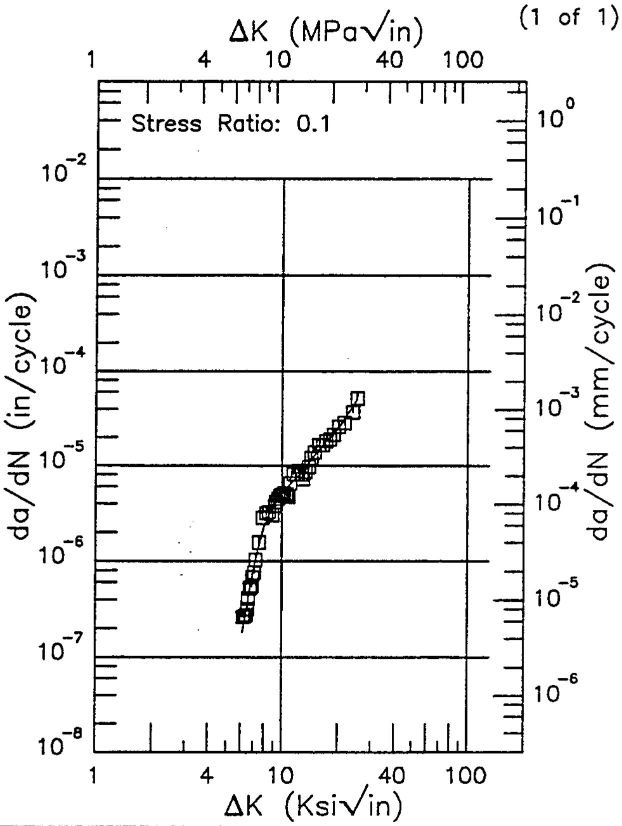
RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

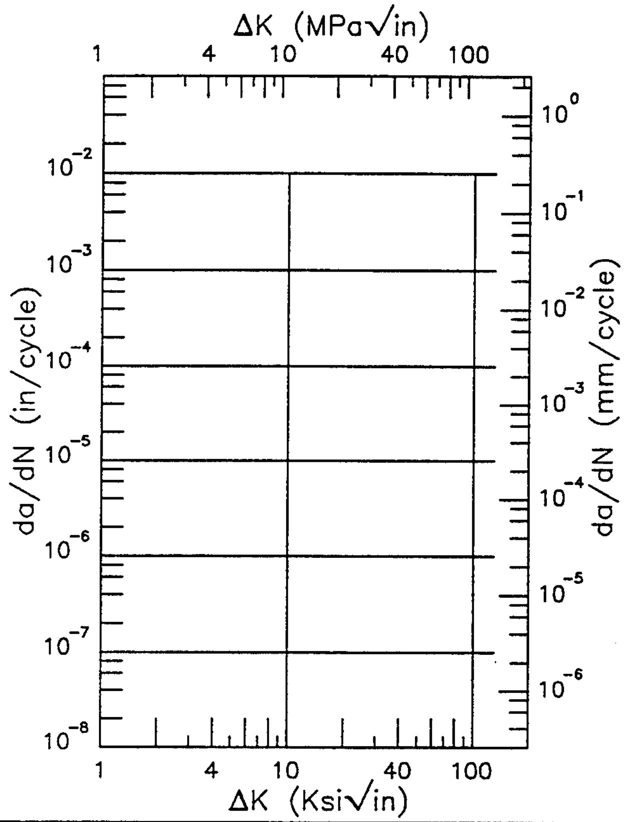
Figure 8.22.3.1.3

Condition/Ht: T651
Form: 1 in. Extrusion
Specimen Type: CT
Orientation: L–T
Frequency: 25 Hz
Environment: H.H.A.; RT

Yield Strength: 54.6 ksi
Ult. Strength: 68.4 ksi
Specimen Thk: 0.291 in.
Specimen Width: 1.995 in.
Ref: WL003

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
6.16 (min)	0.181
7.	0.836
8.	2.30
9.	3.92
10.	5.24
13.	8.78
16.	15.5
20.	24.6
25.	49.3
25.06 (max)	50.0

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error	Life Prediction Ratio Summary
14.36	0. .5 .8 1.25 2.

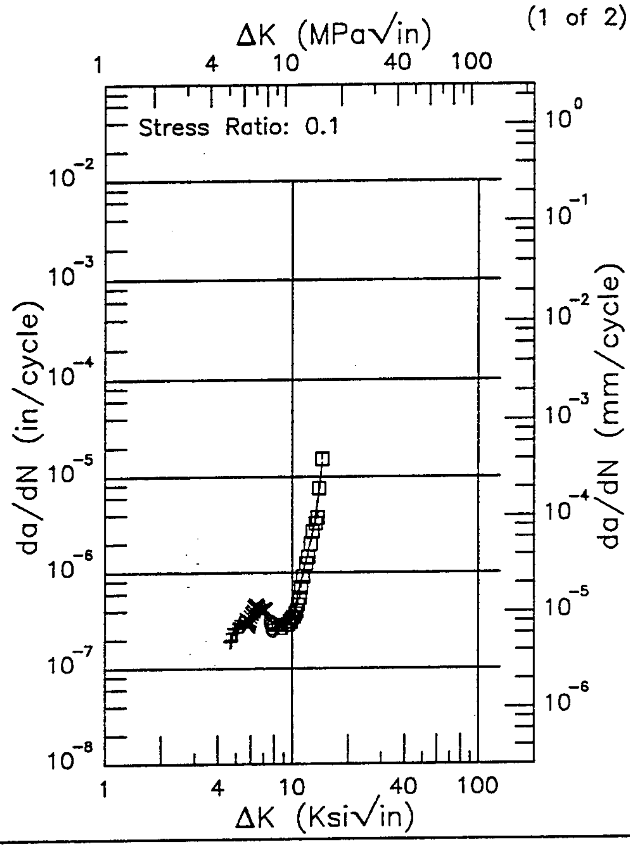
RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

Figure 8.22.3.1.4

R 8090

Condition/Ht: T651	Yield Strength: 64.1 ksi
Form: 1 in. Extrusion	Ult. Strength: 75.6 ksi
Specimen Type: CT	Specimen Thk: 0.291 – 0.292 in.
Orientation: T-L	Specimen Width: 1.992 – 1.995 in.
Frequency: 25 Hz	Ref: WL003
Environment: LAB AIR; RT	

(1 of 2)

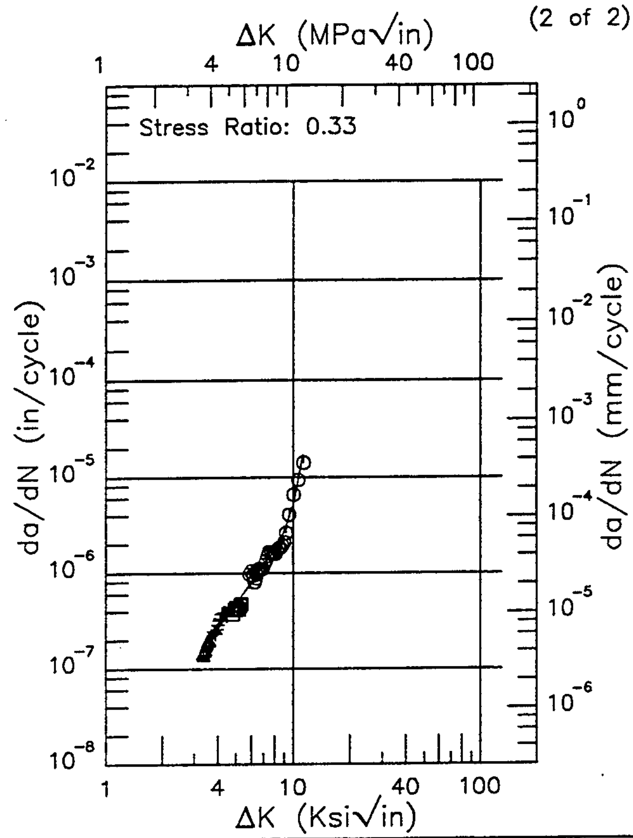


ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)
4.65 (min)	0.211
5.	0.250
6.	0.369
7.	0.389
8.	0.297
9.	0.257
10.	0.342
13.	2.77
14.40 (max)	14.3

RMS % Error: 11.65

Life Prediction Ratio Summary: 0. .5 .8 1.25 2.

(2 of 2)



ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)
3.32 (min)	0.163
3.5	0.187
4.	0.266
5.	0.486
6.	0.796
7.	1.20
8.	1.72
9.	2.69
10.	5.12
11.30 (max)	17.0

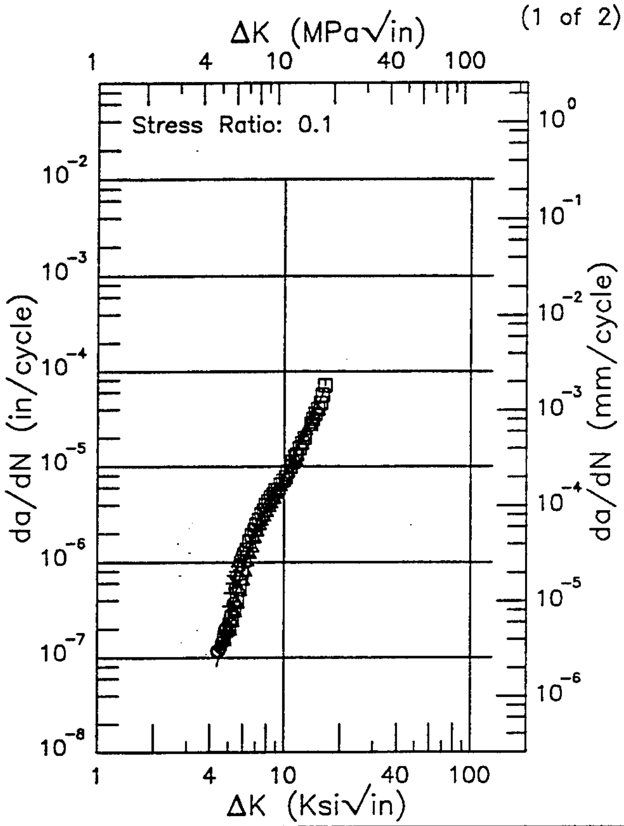
RMS % Error: 12.79

Life Prediction Ratio Summary: 0. .5 .8 1.25 2.

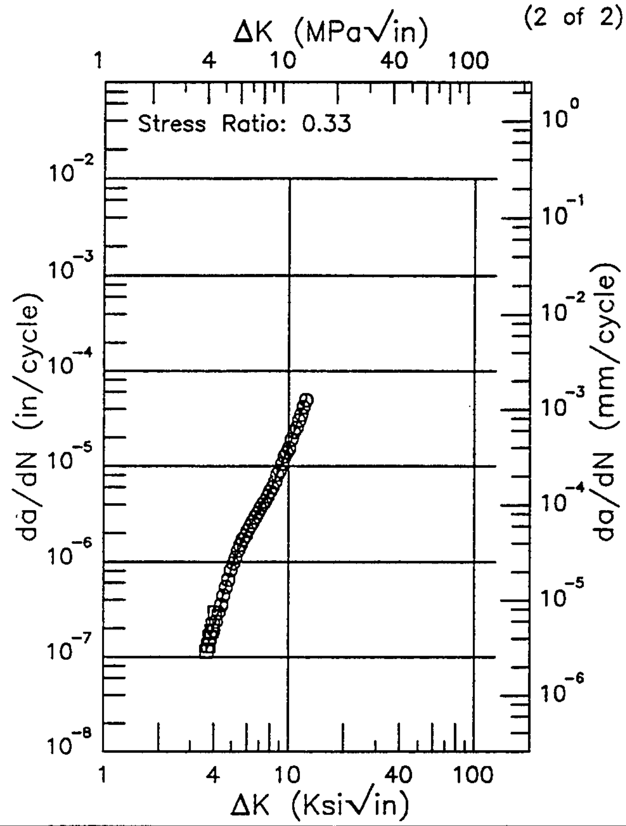
Figure 8.22.3.1.5

Condition/Ht: T651
Form: 1 in. Extrusion
Specimen Type: CT
Orientation: T–L
Frequency:
Environment: H.H.A.;82°F –85°F

Yield Strength: 67.5 ksi
Ult. Strength: 76.6 ksi
Specimen Thk: 0.237 – 0.238 in.
Specimen Width: 2 in.
Ref: WL003



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
4.35 (min)	0.0824
5.	0.274
6.	0.924
7.	2.03
8.	3.56
9.	5.52
10.	8.02
13.	21.8
16.	58.8
16.41 (max)	67.8



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
3.66 (min)	0.119
4.	0.212
5.	0.857
6.	2.08
7.	3.48
8.	5.48
9.	9.29
10.	15.7
12.41 (max)	49.9

RMS % Error	Life Prediction Ratio Summary
20.72	△ ⊡ — 0. .5 .8 1.25 2.

RMS % Error	Life Prediction Ratio Summary
5.43	⊙ — 0. .5 .8 1.25 2.

Figure 8.22.3.1.6

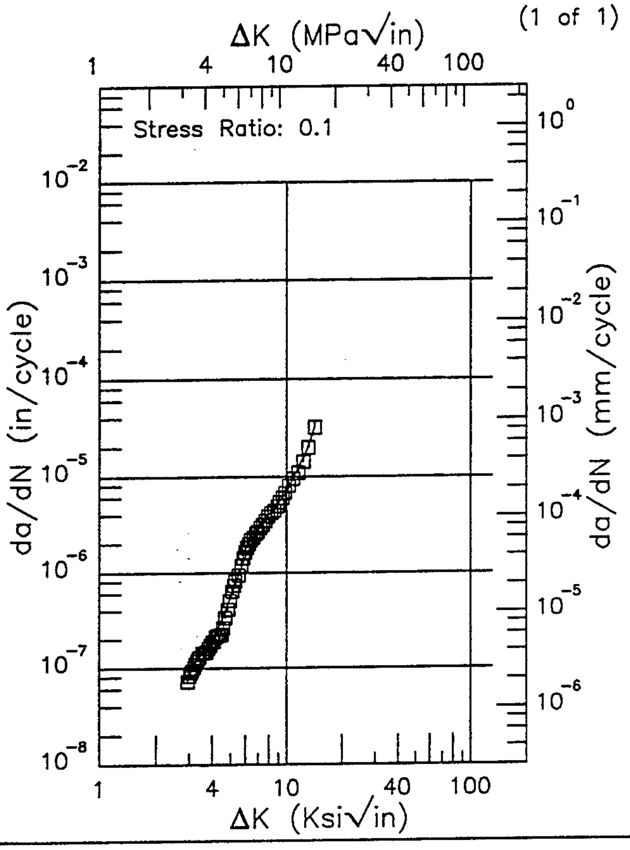
R

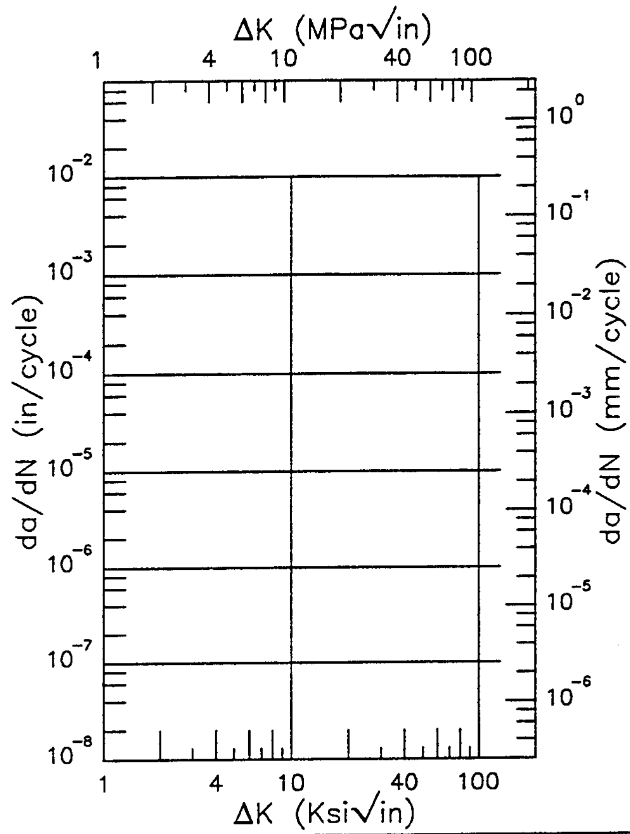
8090

Condition/Ht: T651
Form: 1 in. Extrusion
Specimen Type: CT
Orientation: T–L
Frequency: 10 Hz
Environment: H.H.A.; RT

Yield Strength: 68.7 ksi
Ult. Strength: 75.6 ksi
Specimen Thk: 0.254 in.
Specimen Width: 3.006 in.
Ref: WL003

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
2.94 (min)	0.100
3.	0.0988
3.5	0.115
4.	0.180
5.	0.549
6.	1.44
7.	2.74
8.	4.01
9.	5.29
10.	6.90
13.	19.2
14.14 (max)	31.2

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error	Life Prediction Ratio Summary
11.75	0. .5 .8 1.25 2.

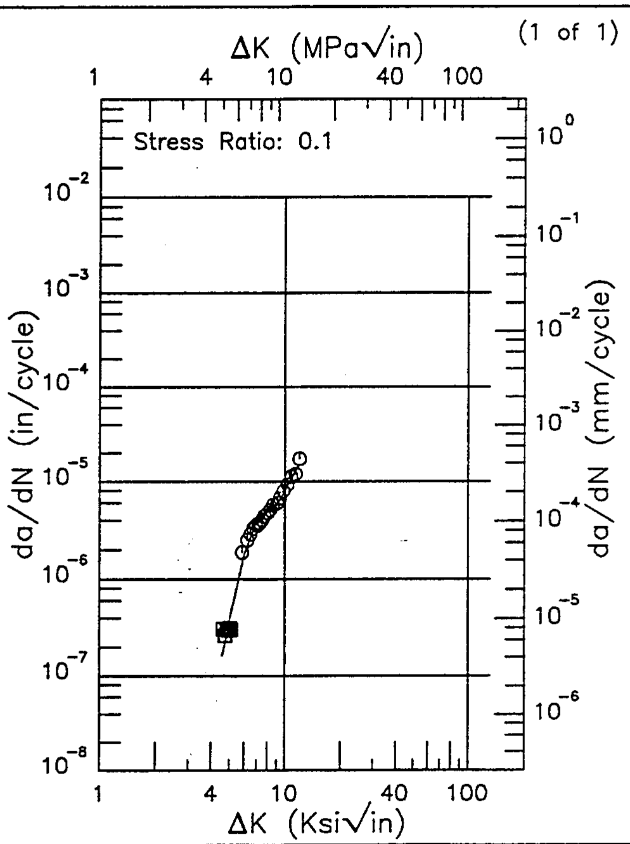
RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

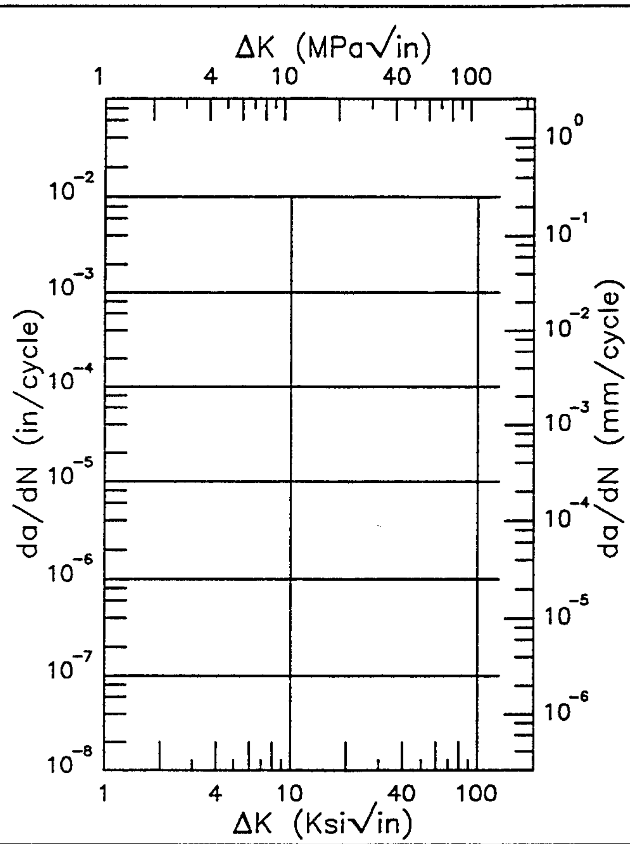
Figure 8.22.3.1.7

Condition/Ht: T651
Form: 1 in. Extrusion
Specimen Type: CT
Orientation: T−L
Frequency: 25 Hz
Environment: H.H.A.; RT

Yield Strength: 64.1 ksi
Ult. Strength: 75.6 ksi
Specimen Thk: 0.292 in.
Specimen Width: 1.992 in.
Ref: WL003

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)
4.59 (min)	0.163
5.	0.372
6.	1.76
7.	3.98
8.	5.03
9.	5.75
10.	8.06
11.91 (max)	15.0

ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)

RMS % Error	Life Prediction Ratio Summary
21.84	0. .5 .8 1.25 2.

RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

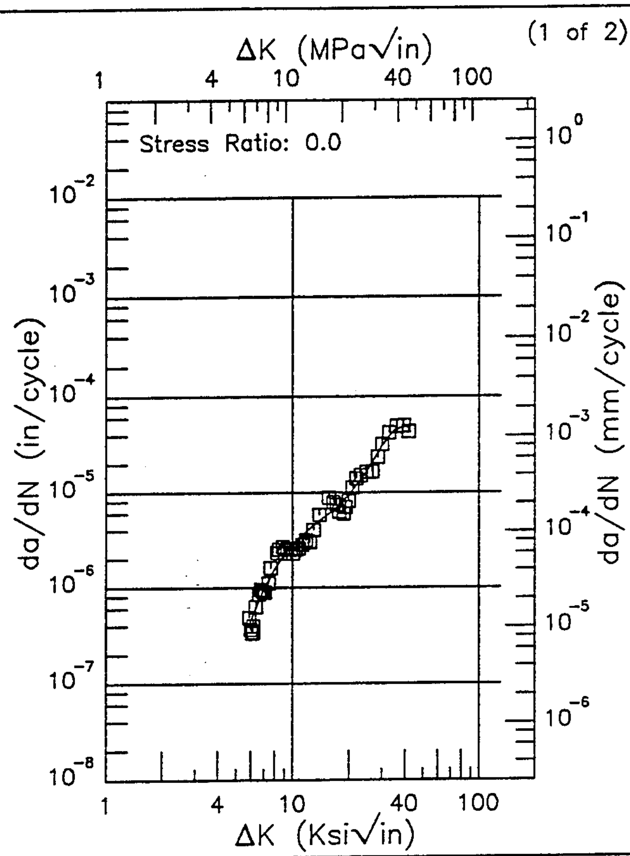
Figure 8.22.3.1.8

R 8090

Condition/Ht: T8; 338F 24HRS
Form: 1 in. Extrusion
Specimen Type: CT
Orientation: L-T
Frequency: 8 - 10 Hz
Environment: H.H.A.; RT

Yield Strength: 62.8 ksi
Ult. Strength: 71.1 ksi
Specimen Thk: 0.254 - 0.256 in.
Specimen Width: 2.495 - 2.503 in.
Ref: WL003

(1 of 2)



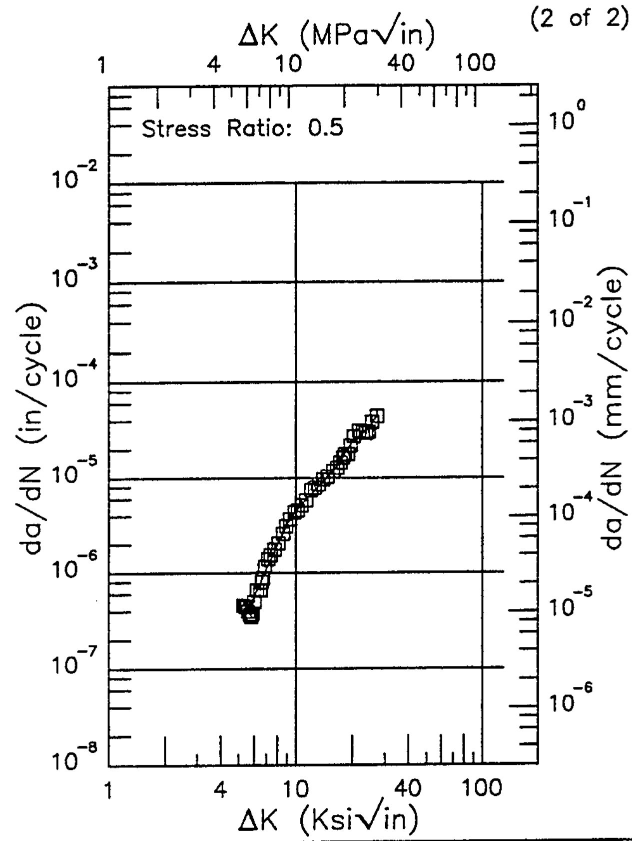
ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
5.86 (min)	0.391
6.	0.449
7.	0.952
8.	1.57
9.	2.22
10.	2.85
13.	4.55
16.	6.22
20.	9.35
25.	17.0
30.	30.9
35.	45.1
40.	49.3
41.66 (max)	47.5

RMS % Error 19.25

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

(2 of 2)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
5.26 (min)	0.326
6.	0.554
7.	1.10
8.	1.98
9.	3.19
10.	4.58
13.	7.97
16.	11.9
20.	23.6
25.	34.7
26.95 (max)	44.4

RMS % Error 11.88

Life Prediction Ratio Summary

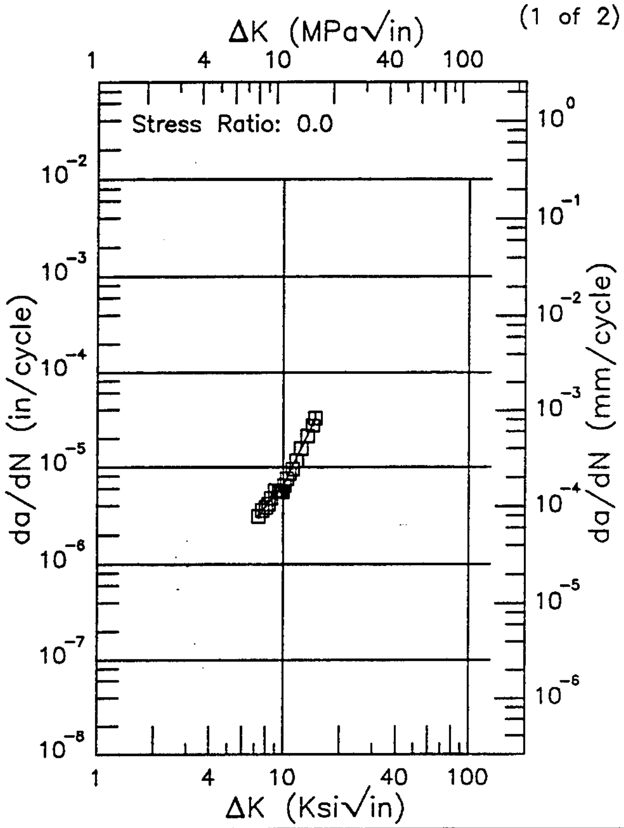
0. .5 .8 1.25 2.

Figure 8.22.3.1.9

Condition/Ht: T8; 338F 24HRS
Form: 1 in. Extrusion
Specimen Type: CT
Orientation: T-L
Frequency: 8 – 10 Hz
Environment: H.H.A.; RT

Yield Strength: 77.4 ksi
Ult. Strength: 80.6 ksi
Specimen Thk: 0.255 in.
Specimen Width: 2.507 – 2.511 in.
Ref: WL003

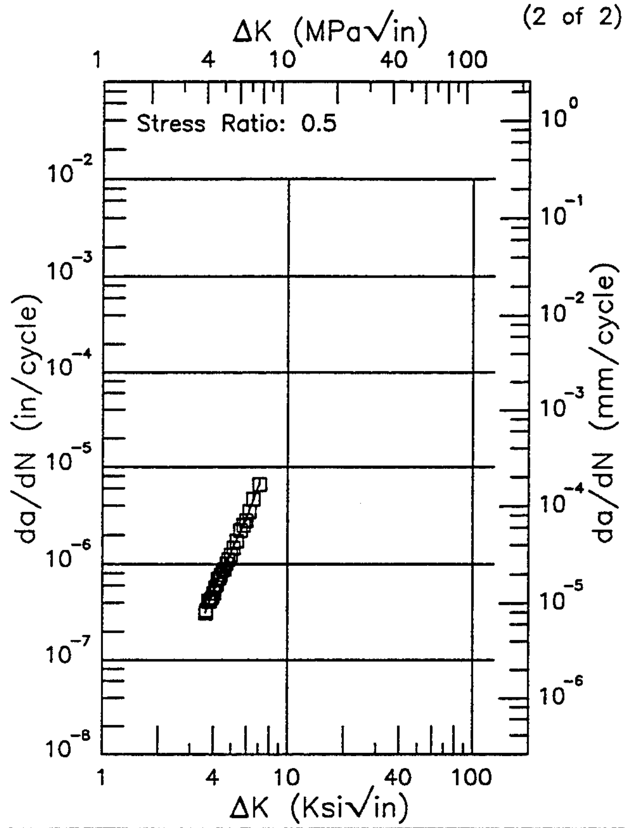
(1 of 2)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
7.34 (min)	2.99
8.	4.00
9.	5.06
10.	6.43
13.	18.4
14.76 (max)	31.5

RMS % Error	Life Prediction Ratio Summary
5.32	0. .5 .8 1.25 2.

(2 of 2)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
3.61 (min)	0.319
4.	0.510
5.	1.31
6.	2.91
7.	6.30
7.07 (max)	6.58

RMS % Error	Life Prediction Ratio Summary
3.83	0. .5 .8 1.25 2.

Figure 8.22.3.1.10

TABLE 8.23.1.2.1

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF STRESS INTENSITY FACTOR ΔK X7090 AT ROOM TEMPERATURE

ORIENTATION: S-T **ENVIRONMENT: 3.5% NaCl**

CONDITION/ HEAT TREATMENT	PRODUCT FORM	R	FREQ (Hz)	*FCGR* (10^{-6} *in/cycle*)					
				ΔK *Level* (*Ksi√in*)					
				2.5	5.0	10.0	20.0	50.0	100.0
T7E69	PLATE	0.5	0.13		11.57				
		0.5	0.2		14.63				

TABLE 8.23.1.2.2

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF STRESS INTENSITY FACTOR ΔK X7090 AT ROOM TEMPERATURE

ORIENTATION: S-T **ENVIRONMENT: Nitrogen Gas**

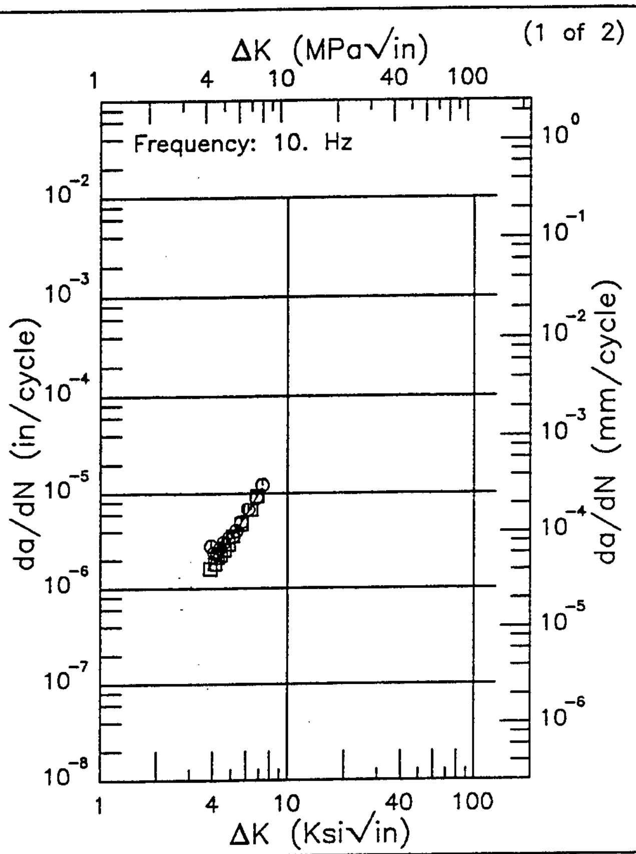
CONDITION/ HEAT TREATMENT	PRODUCT FORM	R	FREQ (Hz)	*FCGR* (10^{-6} *in/cycle*) ΔK *Level* (*Ksi√in*)					
				2.5	5.0	10.0	20.0	50.0	100.0
T7E69	PLATE	0.5	10		3.31				
		0.5	20		3.3				

F X7090

Condition/Ht: T7E69
Form: 1 in. Plate
Specimen Type: CT
Orientation: S–T
Stress Ratio: 0.5
Environment: NITROGEN GAS; RT

Yield Strength: 60 – 70 ksi
Ult. Strength:
Specimen Thk: 0.508 – 0.509 in.
Specimen Width: 1.028 – 1.03 in.
Ref: MR001

(1 of 2)



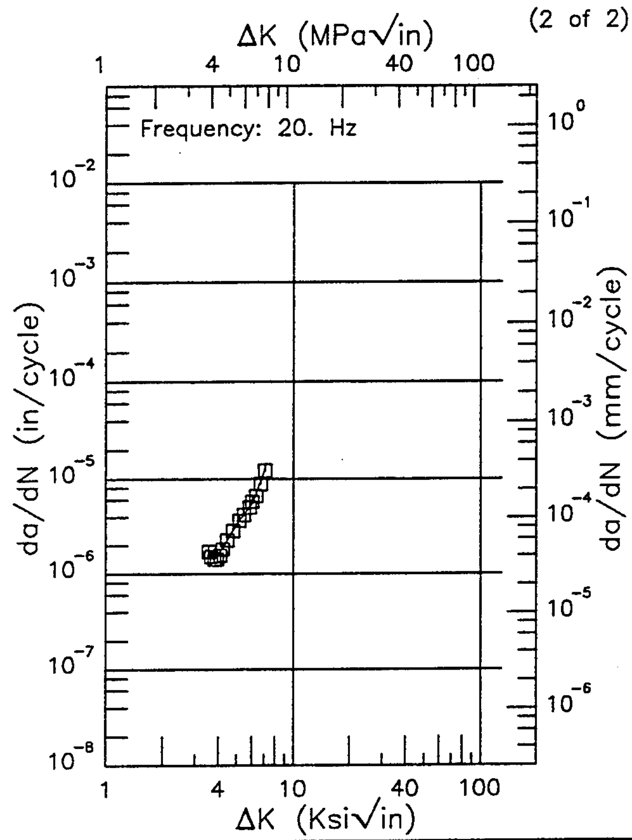
ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
3.86 (min)	2.20
4.	2.22
5.	3.31
6.	5.94
7.	10.0
7.30 (max)	11.4

RMS % Error
11.42

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

(2 of 2)



ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
3.53 (min)	1.57
4.	1.55
5.	3.30
6.	5.40
7.	11.8
7.04 (max)	12.4

RMS % Error
5.38

Life Prediction Ratio Summary

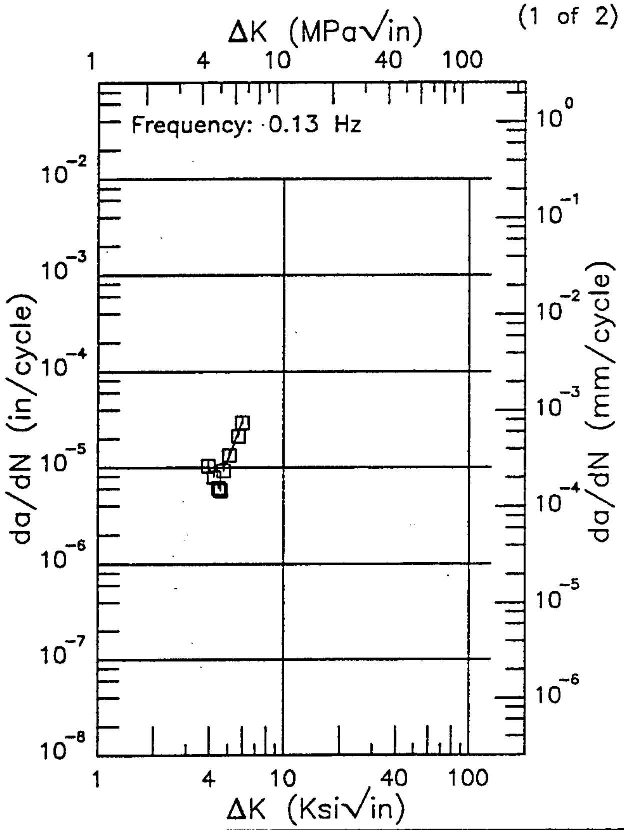
0. .5 .8 1.25 2.

Figure 8.23.3.1.1

Condition/Ht: T7E69
Form: 1 in. Plate
Specimen Type: CT
Orientation: S–T
Stress Ratio: 0.5
Environment: 3.5% NACL; RT

Yield Strength: 65 ksi
Ult. Strength:
Specimen Thk: 0.509 – 0.51 in.
Specimen Width: 1.029 in.
Ref: MR001

(1 of 2)



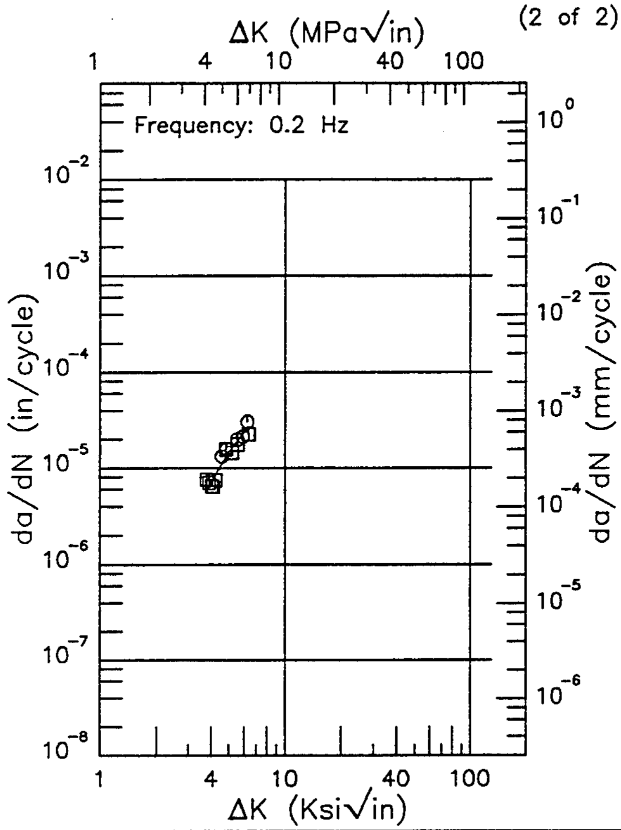
ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)
3.94 (min)	10.3
4.	9.63
5.	11.6
5.94 (max)	29.3

RMS % Error 24.78

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

(2 of 2)



ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)
3.77 (min)	5.62
4.	7.18
5.	14.6
6.	23.6
6.31 (max)	27.0

RMS % Error 16.66

Life Prediction Ratio Summary

0. .5 .8 1.25 2.

Figure 8.23.3.1.2

TABLE 8.24.1.2.1

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF STRESS INTENSITY FACTOR ΔK X7091 AT ROOM TEMPERATURE

ORIENTATION: T-L **ENVIRONMENT: Nitrogen Gas**

CONDITION/ HEAT TREATMENT	PRODUCT FORM	R	FREQ (Hz)	*FCGR* (10^{-6} *in/cycle*)					
				ΔK *Level* (*Ksi√in*)					
				2.5	5.0	10.0	20.0	50.0	100.0
T7E70	PLATE	0.5	20		2.74	21.35			

TABLE 8.24.1.2.2

FATIGUE CRACK GROWTH RATE AT DEFINED LEVELS OF STRESS INTENSITY FACTOR ΔK X7091 AT ROOM TEMPERATURE

ORIENTATION: S-T **ENVIRONMENT: Nitrogen Gas**

CONDITION/ HEAT TREATMENT	PRODUCT FORM	R	FREQ (Hz)	*FCGR* (10^{-6} *in/cycle*) ΔK *Level* (*Ksi√in*)					
				2.5	5.0	10.0	20.0	50.0	100.0
T7E70	PLATE	0.1	20			12.92	109		
		0.5	20		3.02	19.93			

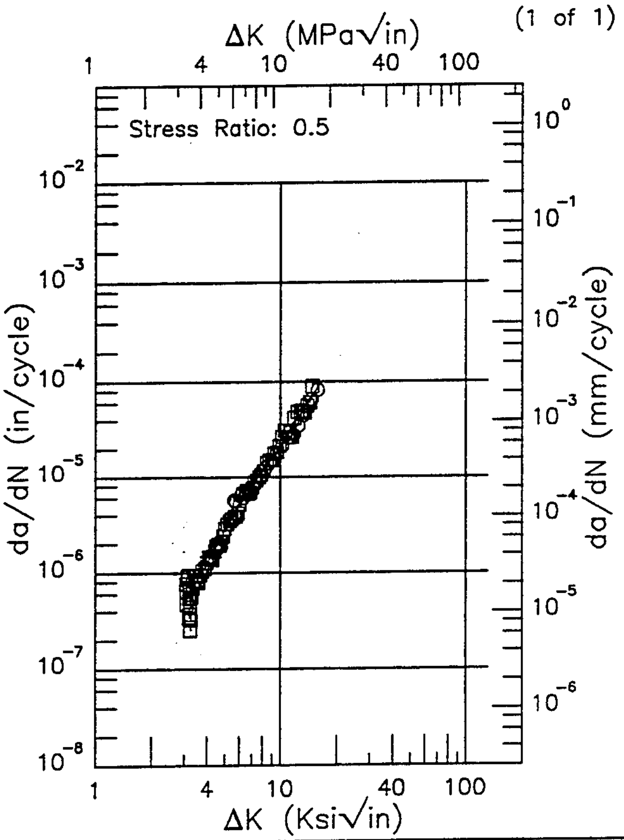
R

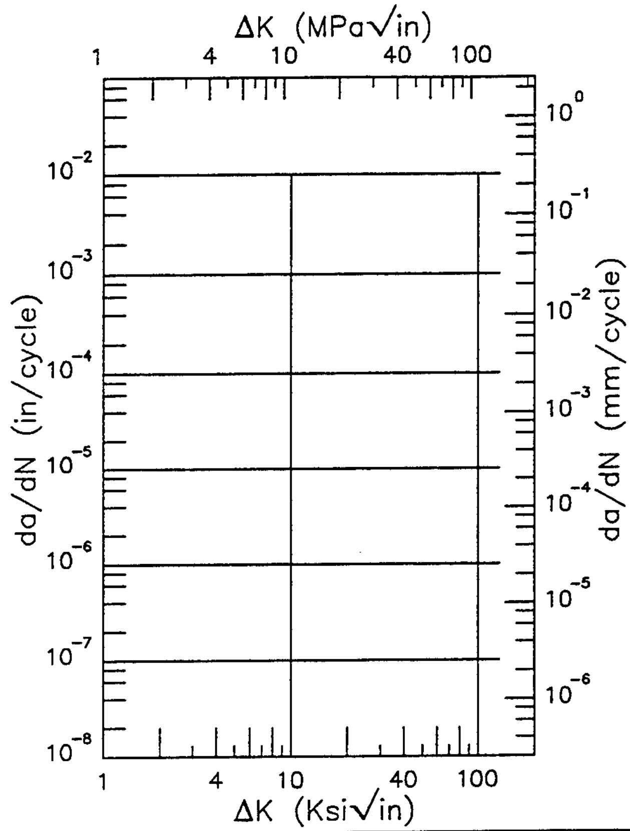
X7091

Condition/Ht: T7E70
Form: 1 in. Plate
Specimen Type: CT
Orientation: T–L
Frequency: 20 Hz
Environment: NITROGEN GAS; RT

Yield Strength: 60 ksi
Ult. Strength: 73.2 ksi
Specimen Thk: 0.51 – 0.513 in.
Specimen Width: 1.032 – 1.033 in.
Ref: MR001

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)
3.06 (min)	0.539
3.5	0.790
4.	1.23
5.	2.74
6.	5.12
7.	8.07
8.	11.5
9.	15.8
10.	21.3
13.	48.9
15.71 (max)	87.2

ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)

RMS % Error	Life Prediction Ratio Summary
18.36	0. .5 .8 1.25 2.

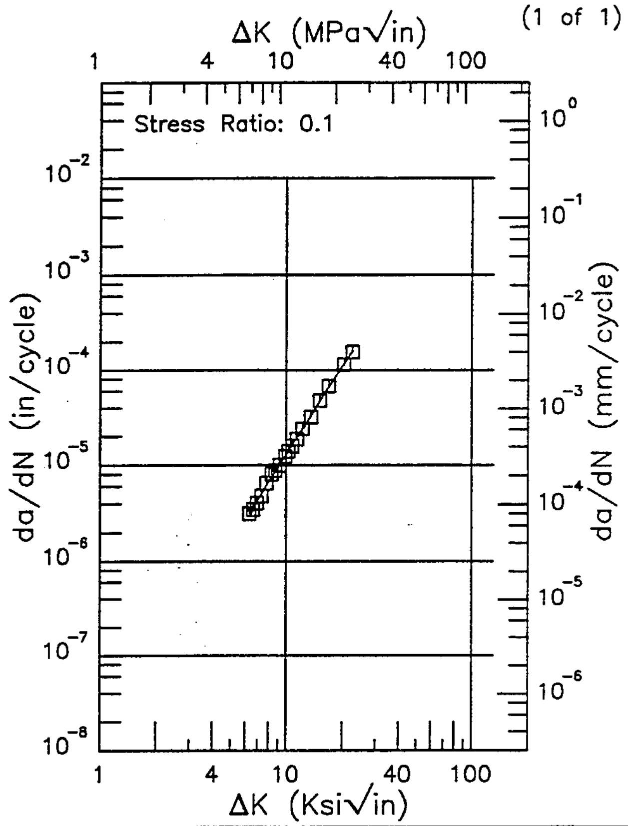
RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

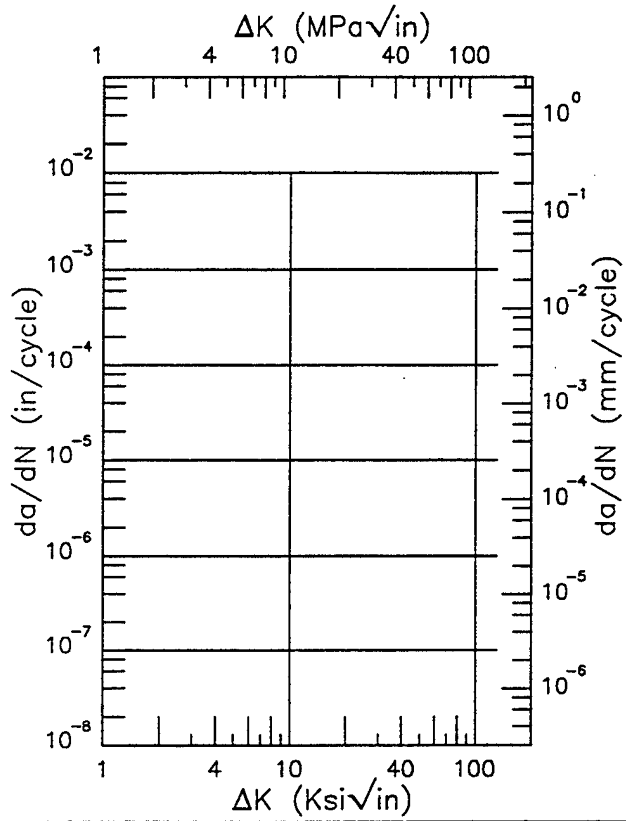
Figure 8.24.3.1.1

Condition/Ht: T7E70
Form: 1 in. Plate
Specimen Type: CT
Orientation: S–T
Frequency: 20 Hz
Environment: NITROGEN GAS; RT

Yield Strength: 70 ksi
Ult. Strength:
Specimen Thk: 0.483 in.
Specimen Width: 1.021 in.
Ref: MR001

(1 of 1)





ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)
6.32 (min)	2.92
7.	4.31
8.	6.71
9.	9.54
10.	12.9
13.	28.5
16.	57.0
20.	109.
22.48 (max)	156.

ΔK (Ksi√in)	da/dN (10^{-6} in/cycle)

RMS % Error	Life Prediction Ratio Summary
3.11	0. .5 .8 1.25 2.

RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.

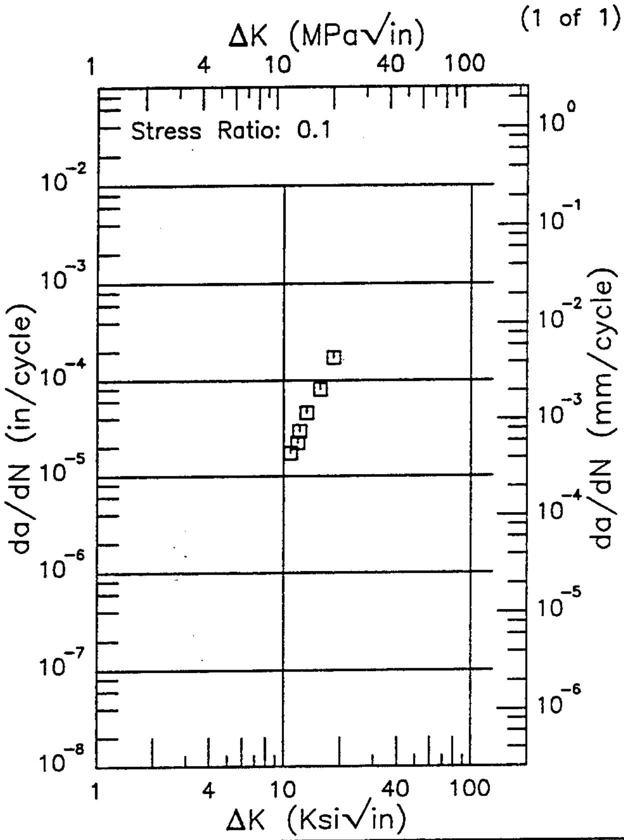
Figure 8.24.3.1.2

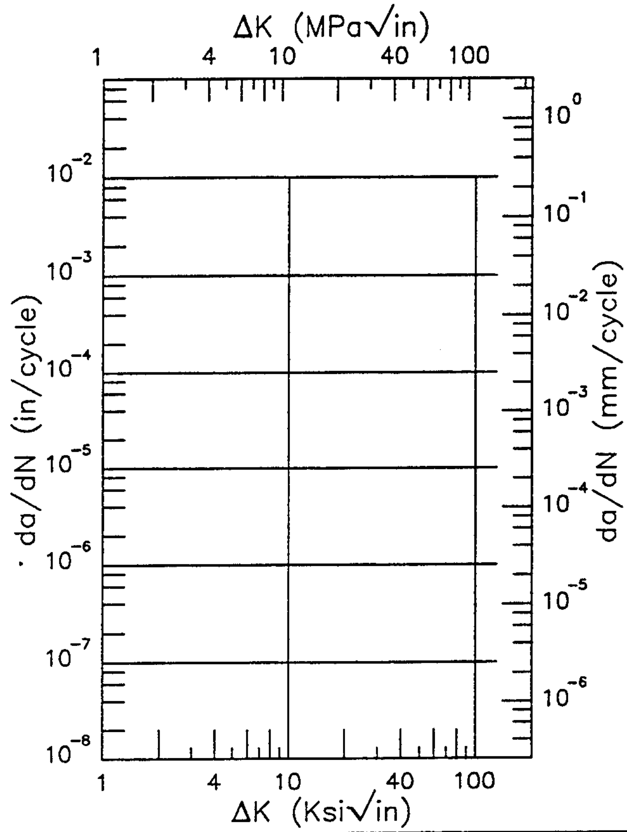
R X7091

Condition/Ht: T7E70
Form: 1 in. Plate
Specimen Type: CT
Orientation: S–T
Frequency: 0.2 Hz
Environment: 3.5% NACL; RT

Yield Strength: 70 ksi
Ult. Strength:
Specimen Thk: 0.485 in.
Specimen Width: 1.04 in.
Ref: MR001

(1 of 1)





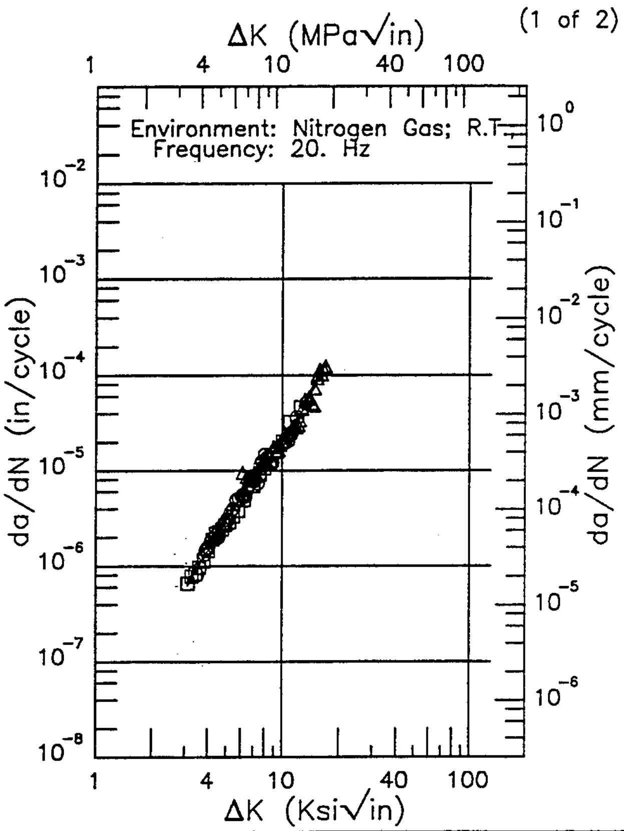
ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)	ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

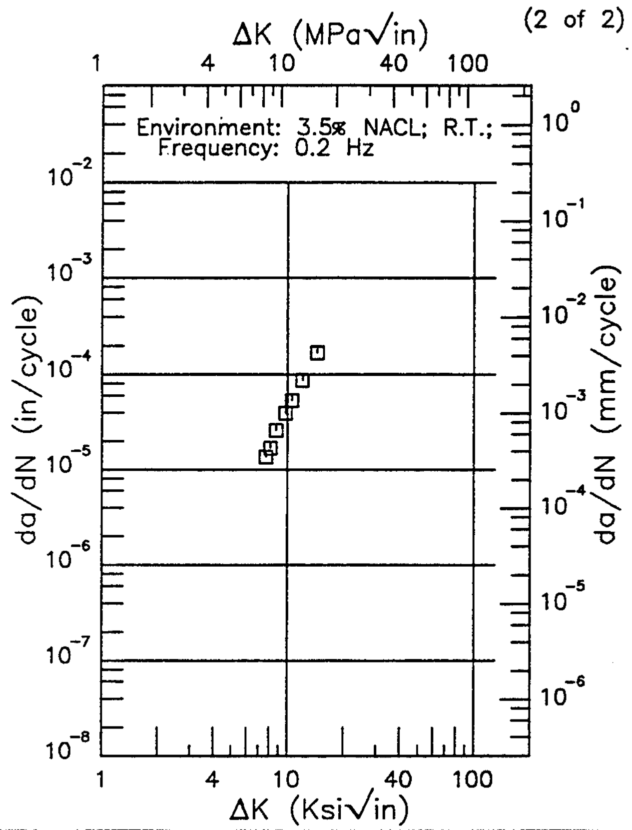
RMS % Error	Life Prediction Ratio Summary	RMS % Error	Life Prediction Ratio Summary
	0. .5 .8 1.25 2.		0. .5 .8 1.25 2.

Figure 8.24.3.1.3

Condition/Ht: T7E70
Form: 1 in. Plate
Specimen Type: CT
Orientation: S-T
Stress Ratio: 0.5

Yield Strength: 60 – 70 ksi
Ult. Strength:
Specimen Thk: 0.511 – 0.515 in.
Specimen Width: 1.032 – 1.034 in.
Ref: MR001





ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)
3.10 (min)	0.626
3.5	0.926
4.	1.44
5.	3.02
6.	5.31
7.	8.12
8.	11.3
9.	15.1
10.	19.9
13.	45.0
16.	104.
16.82 (max)	133.

ΔK (Ksi√in)	da/dN (10^{-6}in/cycle)

RMS % Error
13.55

Life Prediction Ratio Summary
0. .5 .8 1.25 2.

RMS % Error

Life Prediction Ratio Summary
0. .5 .8 1.25 2.

Figure 8.24.3.1.4

TABLE 8.25

REFERENCES FOR THE 7000 SERIES ALUMINUM ALLOY DATA

57210	7075	K_c	
	Unknown.		
62306	7075	K_c	
	Eichenberger, T. W., "Fracture Resistance Data Summary," Report DA-20947, The Boeing Company (June 1962).		
62309	7075	K_c	
	Batch, E. J., and Edwards, W. T., "Evaluation of Tear Resistance of 7079 Aluminum Alloys (Sheet Extrusions and Forgings)," Report SMN 86, Lockheed Aircraft Corporation, Marietta, Ga., (April 13, 1962).		
62310	7075	K_c	
	Anon., "Fracture Toughness Data Summary of 2000 and 7000 Series Aluminum Alloys," The Boeing Company, received from J. P. Butler (April 1965).		
62311	7075 (ALCLAD)	K_c	
	Gurin, P. J., "Crack Propagation Tests for Some Aluminum Alloy Materials," LR 10498, Lockheed Aircraft Corporation (February 1955).		
65697	7075 (ALCLAD)	K_c	
	Broek, D., "The Residual Strength of Aluminum Alloy Sheet Specimens Containing Fatigue Cracks of Saw Cuts," NLR-TR M.2143, National Aerospace Laboratory, Amsterdam (March 1966).		
70485	7075 (ALCLAD)	K_c	
	Broek, D., "The Effect of Finite Specimen Width on the Residual Strength of Light Alloy Sheet," TR M.2152, National Aero- and Astronautical Research Institute, Amsterdam (September 1965).		
75599	7075	K_c	
	Hudson, C. M., "Effect of Stress Ratios on Fatigue-Crack Growth in 7075-T6 and 2024-T3 Aluminum-Alloy Specimens," NASA TN D-5390, Langley Research Center (August 1969).		

TABLE 8.25 (CONTINUED)

REFERENCES FOR THE 7000 SERIES ALUMINUM ALLOY DATA

75787 7075 K_{Iscc}

Procter, R. P. M., and Paxton, H. W., "Stress Corrosion of Aluminum Alloy 7075-T651 in Organic Liquids," Journal of Materials, 4 (3) 729-760 (September 1969).

76411 7079 K_{Ic}

Wessel, E. T., et al., "Engineering Methods for the Design and Selection of Materials Against Fracture," Final Technical Report, Westinghouse Research Laboratories, Pittsburgh, PA, Contract DA-30-069-AMC-602 (T) (June 24, 1966).

76442 7079 da/dt

Beck, T. R., Blackburn, M. J., and Spiedel, M. O., "Stress Corrosion Cracking of Titanium Alloys",Boeing Scientific Research Laboratories, Contract NAS 7-489, Seattle, Washington, 98124, March 1969.

77140 7075 K_{Ic}
7178 K_{Ic}

Kaufman, J. G., Schilling, P. E., and Nordmark, G. E., "Fracture Toughness, Fatigue and Corrosion Characteristics of X7080-T7E41 and 7178-T651 Plate and 7075-T6510, 7075-T73510, X7080-T7E42, and 7178-T6510 Extruded Shapes," Report AFML-TR-67-C-1521 (November 1969).

77720 7075 K_{Ic}; a-vs-N; da/dN
7079 K_{Ic}; a-vs-N; da/dN

Brownhill, D. J., et al., "Mechanical Properties, Including Fracture Toughness and Fatigue, Corrosion Characteristics and Fatigue-Crack Propagation Rates of Stress-Relieved Aluminum Alloy Hand Forgings," Report AFML-TR-70-10, Aluminum Company of America, Alcoa Research Laboratory, New Kensington, PA, Contract F33615-68-C-1385 (February 1970).

78313 7075 da/dt
7079 da/dt; K_{Iscc}
7175 da/dt; K_{Iscc}

Hyatt, M. V., "Use of Precracked Specimens in Stress-Corrosion Testing of High-Strength Aluminum Alloys," Summary Report D6-24466, The Boeing Company, Renton, Wash., ARPA Contract N00014-66-C-0365 (November 1969).

TABLE 8.25 (CONTINUED)

REFERENCES FOR THE 7000 SERIES ALUMINUM ALLOY DATA

79089	7075	K_c

Fedderson, C. E., and Hyler, W. S., "Fracture-Crack Propagation Characteristics of 7075-T7351 Aluminum Alloy Sheet and Plate Report No. G-8902, Battelle Memorial Institute, Columbus Laboratories (March 1970).

80073	7007	K_{Iscc}

Schwartzberg, F. R., et al., "Cryogenic Alloy Screening," Report NASA CR-72733, Martin Marietta Corporation, Denver, CO, Contract NAS 3-11203 (November 1970).

82675	7075	K_{Ic}; K_{Iscc}

Chu, H. P., and Wacker, G. A., "Fracture Toughness and Stress Corrosion Properties of Aluminum Alloy Hand Forgings," Journal of Materials, 7 (1) 95-99 (March 1972).

82879	7075	K_{Ic}
	7079	K_{Ic}
	7080	K_{Ic}

Moore, R. L., et al., "Fatigue and Fracture Characteristics of Aluminum Alloy Cylinders Under Internal Pressure," Engineering Fracture Mechanics, 4 (1) 51-63 (March 1972).

82880	7075	K_{Ic}
	7079	K_{Ic}

Nelson, F. G., et al., "The Effect of Specimen Size on the Results of Plane-Strain Fracture-Toughness Tests," Engineering Fracture Mechanics, 4 (1) 33-50 (March 1972).

83058	7175	K_{Ic}

Jones, R. E., "Fracture Toughness and Fatigue Crack Growth Properties of 7175-T736 Aluminum Alloy Forgings at Several Temperatures," Report AFML-TR-72-1, University of Dayton Research Institute, Dayton, OH, Contract F33615-71-C-1054 (February 1972).

83061	7049	K_{Ic}; K_{Iscc}

Jones, R. E., "Mechanical Properties of 7049-T73 and 7049-T76 Aluminum Alloy Extrusions at Several Temperatures," Report AFML-TR-72-2, University of Dayton Research Institute, Dayton, OH, Contract F33615-71-C-1054 (February 1972).

TABLE 8.25 (CONTINUED)

REFERENCES FOR THE 7000 SERIES ALUMINUM ALLOY DATA

83242	7049	K_{Ic}; K_{Iscc}
	7175	K_{Ic}; K_{Iscc}

Harmsworth, C. L., "Evaluation of Landing Gears Fabricated from 7175-T736 Aluminum Alloys" Report No. LA 72-22, Air Force Materials Laboratory, Wright-Patterson AFB, OH, (May 25, 1972).

84284	7039	da/dt
	7049	da/dt
	7075	da/dt
	7079	da/dt
	7175	da/dt

Hyatt, M. V., "Use of Precracked Specimens in Stress Corrosion Testing of High Strength Aluminum Alloys," Corrosion, 26 (11), 487-503 (November 1970).

84286	7075	da/dt

Hyatt, M. V., "Use of Precracked Specimens in Selecting Heat Treatments for Stress-Corrosion Resistance in High Strength Aluminum Alloys," Corrosion, 27 (1), 49-53 (January 1971).

84288	7075	K_{Ic}
	7079	K_{Ic}

Nelson, F. G., and Kaufman, J. G., "Plane Strain Fracture Toughness of Aluminum Alloys at Room and Subzero Temperatures". ASTM STP 496, American Society for Testing and Materials, Philadelphia, PA, (1971).

84306	7049	K_{Ic}
	7075	K_{Ic}

Harrigan, M. J., "B-1 Fracture Mechanics Data for Air Force Handbook Usage," Report TFD-72-501, North American Rockwell, Los Angeles Division, Los Angeles, CA, (April 21, 1972).

84329	7079	K_{Iscc}

Report of NRL Progress, Naval Research Laboratory, Washington, D. C., (October 1967).

TABLE 8.25 (CONTINUED)

REFERENCES FOR THE 7000 SERIES ALUMINUM ALLOY DATA

84330	7079	da/dt; K_{Iscc}

Report of NRL Progress, Naval Research Laboratory, Washington, D. C., (April 1968).

84331	7005	K_{Iscc}
	7075	K_{Iscc}
	7079	K_{Iscc}

Report of NRL Progress, Naval Research Laboratory, Washington, D. C., (January 1968).

84340	7075	K_c

Allen, F. C., "Effect of Thickness on the Fracture Toughness of 7075 Aluminum in the T6 and T73 Conditions," ASTM STP 486, "Damage Tolerance in Aircraft Structures," p 16-38 (1971).

84360	7075	K_{Ic}; da/dN; K_{Iscc}
	7175	da/dN; K_{Iscc}

McDonnell Aircraft Company, McDonnell Corp., St. Louis, Mo., Phase B Test Program, Report MDC A0913 (May 18, 1971).

84362	7050	K_{Iscc}
	7075	K_{Iscc}

Dill, H. D., and Rich, D. L., "Evaluation of Aluminum Plate Alloys 7075-T7351, X7050-T73651 and 2021-T81," Report No. MDC A1755, McDonnell Aircraft Company, McDonnell Corporation, St. Louis, MO, (May 30, 1972).

84363	7050	K_{Ic}
	7075	K_{Ic}; a-vs-N; da/dN

Rich, D. L., "MCAIR IRAD Data for Fracture Mechanics Engineering and Design Data Handbook," with enclosures (1) Materials Definition, (2) Mechanical Properties Test Data, (3) Plane Strain Fracture Toughness Test Data, and (4) Plane Strain Constant Amplitude Crack Growth Test Data, McDonnell Aircraft Company, McDonnell Douglas Corporation, St. Louis, MO (June 1972).

TABLE 8.25 (CONTINUED)

REFERENCES FOR THE 7000 SERIES ALUMINUM ALLOY DATA

84367	7075	K_c

McEvily, A. J., Illg, W., and Hardrath, H. F., "Static Strength of Aluminum-Alloy Specimens Containing Fatigue Cracks," NACA TN 3816, Langley Aeronautical Laboratories (October 1956).

84368	7049	K_{Ic}
	7175	K_{Ic}
	7475	K_c
	7475 (ALCLAD)	K_c

Babilon, C. F., et al., "Mechanical Properties, Fracture Toughness, Fatigue, Environmental Fatigue Crack Growth Rates, and Corrosion Characteristics of High-Toughness Aluminum Alloy Forgings, Sheet and Plate," Fifth Technical Management Report, Aluminum Company of America, Alcoa Research Laboratories, New Kensington, PA, Contract F33615-71-C-1571 (August 1972).

85291	7050	K_{Ic}

Deel, O. L., and Mindlin, H., "Engineering Data on New Aerospace Structural Materials," Report AFML-TR-72-196, Volume 1, Battelle, Columbus Laboratories, Columbus, OH, Contract F33615-71-C-1262 (September 1972).

85363	7475	a-vs-N; da/dN

Cervay, R. R., "Engineering Design Data for Aluminum Alloy 7475 in the T761 and T61 Condition," Report AFML-TR-72-173, University of Dayton Research Institute, Dayton, OH, Contract F33615-71-C-1054, (September 1972).

85543	7075	da/dt
	7079	da/dt
	7178	da/dt

Speidel, M. O., "Current Understanding of Stress Corrosion Crack Growth in Aluminum Alloys," from the Theory of Stress Corrosion Cracking in Aluminum Alloys, the Proceedings of a Research Evaluation Conference, J. C. Scully (Editor), Published by NATO Scientific Affairs Division, Brussels, Belgium (1971).

85836	7049	K_{Ic}
	7050	K_{Ic}
	7075	K_{Ic}

"B-1 Fracture Toughness Data (K_{Ic}) - Rockwell International," Rockwell International Corporation, Los Angeles, CA, (April 24, 1973).

TABLE 8.25 (CONTINUED)

REFERENCES FOR THE 7000 SERIES ALUMINUM ALLOY DATA

85837	7049	a-vs-N; da/dN
	7050	a-vs-N; da/dN
	7075	a-vs-N; da/dN
	7175	a-vs-N; da/dN

"Fracture Toughness Data Collection, Rockwell International Corporation, from B-1 Program," Rockwell International Corporation, Los Angeles, CA., April 1973.

85880	7050	K_{Ic}
	7175	K_{Ic}; a-vs-N; da/dN

Garland, K., "Evaluation of X7050-T736 Die Forgings," Report 514-131.10, McDonnell Aircraft Company, McDonnell Douglas Corporation, St. Louis, MO, (February 20, 1973).

86088	7075	a-vs-N; da/dN
	7178	a-vs-N; da/dN

Hudson, C. M., and Newman, J. C., Jr., "Effect of Specimen Thickness on Fatigue-Crack-Growth-Behavior and Fracture Toughness of 7075-T6, and 7178-T6 Aluminum Alloys," Report NASA TN D-7173, Langley Research Center, Hampton, VA (April 1973).

86210	7075	K_{Ic}

"Rockwell International, B-1 Fracture Toughness Data on Titanium and Aluminum Alloys of June 4, 1973," Rockwell International, Los Angeles, CA, (June 4, 1973).

86212	7050	K_{Ic}; K_{Iscc}
	7075	K_{Ic}; K_{Iscc}
	7475	a-vs-N; da/dN; da/dt
	7475 (ALCLAD)	a-vs-N; da/dN

McCarty, J. E., et al., "Materials Fracture Data From the Advanced Metallic Structures: Cargo Fuselage Design for Improved Cost, Weight and Integrity," The Boeing Company, Seattle, Washington, Contract F33615-72-C-1893 (June 15, 1973).

TABLE 8.25 (CONTINUED)

REFERENCES FOR THE 7000 SERIES ALUMINUM ALLOY DATA

86213	7001	K_{Ic}; K_c
	7005	K_{Ic}; K_c
	7049	K_{Ic}
	7050	K_{Ic}; a-vs-N; da/dN
	7075	K_{Ic}; Kc; a-vs-N; da/dN
	7075 (ALCLAD)	K_{Ic}; Kc; a-vs-N; da/dN
	7079	K_{Ic}; K_c
	7079 (ALCLAD)	K_c
	7080	K_{Ic}
	7175	K_{Ic}
	7178	K_{Ic}; K_c; a-vs-N; da/dN
	7178 (ALCLAD)	K_c
	7475	K_{Ic}; K_c; a-vs-N; da/dN
	7475 (ALCLAD)	K_c; a-vs-N; da/dN

Wygonik, R. H., "Compilation of Fracture Mechanics Data," Aluminum Company of America, Alcoa Research Laboratories, New Kensington, PA, Subcontract on F33615-73-C-5051 (June 12, 1973).

86429	7050	K_{Ic}

"Fracture Toughness Data," Progress Report on Materials Test Program, General Dynamics Corporation, Fort Worth Division, Fort Worth, Texas, Contract F33615-72-C-2149 (Received July 6, 1973).

86493	7050	K_{Ic}

Deel, O. L., Ruff, P. E., and Mindlin, H., "Engineering Data on New Aerospace Structural Materials," Report AFML-TR-73-114, Battelle-Columbus Laboratories, Columbus, OH, Contract F33615-72-C-1280 (June 1973).

86574	7050	K_{Ic}
	7475	K_{Ic}

Figge, F. A., and Wells. R. R., "Advanced Metallic Structure: Air Superiority Fighter-Wing Design for Improved Cost, Weight and Integrity," Report No. AFFDL-TR-73-52, Volume III, Northrop Corporation, Aircraft Division, Hawthorne, CA, Contract F33615-72-C-1891 (June 1973), with no original data for da/dN tests.

86575	7075	a-vs-N; da/dN

"Rockwell International, B-1 Program, da/dN Data, Center-Cracked Tension Specimens," Lockheed California Company, Burbank, CA, Report LR25152, (Received July 1973) (Memo from Ed Cawthorne dated July 10, 1973).

TABLE 8.25 (CONTINUED)

REFERENCES FOR THE 7000 SERIES ALUMINUM ALLOY DATA

86688	7075	K_{Iscc}
	7079	K_{Iscc}

Sprowls, D. O., et al., "Evaluation of Stress Corrosion Cracking Susceptibility Using Fracture Mechanics Techniques," Final Report Part I, Aluminum Co., of America, Alcoa Technical Center, Alcoa, Pa., Contract NAS8-21487, May 31, 1973.

86734	7001	a-vs-N; da/dN
	7005	a-vs-N; da/dN
	7075	K_c
	7075 (ALCLAD)	K_c
	7079	a-vs-N; da/dN

Smith, S. H., "Fracture Mechanics Application to Materials Evaluation and Selection for Aircraft Structure and Fracture Analysis," Report No. D6-17756, The Boeing Company, Commercial Airplane Division, Renton, Washington (July 19, 1966).

86842	7049	a-vs-N; da/dN
	7175	a-vs-N; da/dN
	7475	K_c; a-vs-N; da/dN
	7475 (ALCLAD)	K_c

Babilon, C. E., et al., "Mechanical Properties, Fracture Toughness, Fatigue, Environment Fatigue Crack Growth Rates and Corrosion Characteristics of High-Toughness Aluminum Alloy Forgings, Sheet and Plate," Report AFML-TR-73-83, Alcoa Research Laboratories, New Kensington, PA, Contract 71-C-15-71.

86844	7050	a-vs-N; da/dN

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88140	7075	K_{Ic}; da/dN
	7475	da/dN

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TABLE 8.25 (CONTINUED)

REFERENCES FOR THE 7000 SERIES ALUMINUM ALLOY DATA

88174	7050	K_{Ic}; a-vs-N; da/dN

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88186	7050	K_{Ic}

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88579	7049	a-vs-N; da/dN
	7050	a-vs-N; da/dN
	7075	a-vs-N; da/dN
	7175	a-vs-N; da/dN

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90011	7075	K_{Ic}

"Rockwell International, B-1 Program Fracture Toughness Data of August 5, 1974," with memorandum from E. W. Cawthorne to H. D. Moran of Battelle's Columbus Laboratories (August 5, 1974).

91123	7050	K_{Ic}
	7075	K_{Ic}

McCarty, J. E., et al., "Advanced Metallic Structure: Cargo Fuselage Design for Improved Cost, Weight, and Integrity," Report AFFDL-TR-73-53, Boeing Commercial Airplane Company, Seattle, WA, Contract F33615-72-C-1893 (June 1973).

91332	7050	da/dN
	7475	da/dN

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TABLE 8.25 (CONTINUED)

REFERENCES FOR THE 7000 SERIES ALUMINUM ALLOY DATA

AL001	7050 7475	K_{Ic}; da/dN da/dN

Brownhill, D. G., et al., "Exploratory Development for Design Data on Structural Aluminum Alloys in Representative Environments," Alcoa Laboratories, Alcoa Center, PA, Contract No. F33615-74-C-5089, Report No. AFML-TR-77-102, July 1977.

AL002	7075 7475	a-vs-N; da/dN a-vs-N; da/dN

Data Sheets Containing Fatigue-Crack Growth Rate Data Near the Threshold on Aluminum Alloys 2020, 2024, and 7475, sent from R. J. Bucci, Aluminum Company of America, ATC, February 1982.

AL003	7475	a-vs-N; da/dN

FCGR Data Sheets for Aluminum 7475-T651 Plate, Received from R. J. Bucci, Aluminum Company of America, Alcoa Laboratories, August 1982.

AL004	7050	a-vs-N; da/dN

FCGR Data Sheets on Aluminum Alloy 7050-T6511 and T73511, Received from R. J. Bucci, Aluminum Company of America, Alcoa Laboratories, August 1982.

AL005	7075	a-vs-N; da/dN

FCGR Data Sheets on Aluminum Alloy 7075- Conditions T651, T6510, T7351, T73510, Plates, Bars, and Extrusions; Received from R. J. Bucci, Aluminum Company of America, Alcoa Laboratories, August 1982.

AL006	7050	a-vs-N; da/dN

FCGR Data Sheets on Aluminum Alloy 7050-T73511 Extrusions, Received from R. J. Bucci, Aluminum Company of America, Alcoa Laboratories, August 1982.

AL007	7050	a-vs-N; da/dN

FCGR Data Sheets on Aluminum Alloy 7050-T7351X Extrusions, Received from R. J. Bucci, Aluminum Company of America, Alcoa Laboratories, August 1982.

TABLE 8.25 (CONTINUED)

REFERENCES FOR THE 7000 SERIES ALUMINUM ALLOY DATA

AL008	7050	a-vs-N; da/dN
	FCGR Data Sheets on Aluminum Alloy 7050-T7651X Extrusions, Received from R. J. Bucci, Aluminum Company of America, Alcoa Laboratories, August 1982.	
AL009	7475	a-vs-N; da/dN
	FCGR Data Sheets on Aluminum Alloy 7475-T7351 Plate, Received from R. J. Bucci, Aluminum Company of America, Alcoa Laboratories, August 1982.	
AL012	7050 (ALCLAD)	a-vs-N; da/dN
	FCGR Data Sheets on Aluminum 7050-T76 (ALCLAD), Received from R. J. Bucci, Aluminum Company of America, Alcoa Laboratories, August 1982.	
AL013	7050	a-vs-N; da/dN
	FCGR Data Sheets on Aluminum Alloy 7050-T73651 Plate, Received from R. J. Bucci, Aluminum Company of America, Alcoa Laboratories, August 1982.	
AL014	7150	a-vs-N; da/dN
	FCGR Data Sheets on Aluminum Alloy 7150-T651 Plate, Received from R. J. Bucci, Company of America, Alcoa Laboratories, August 1982.	
AL015	7050	K_{Ic}; da/dN
	FCGR Data Sheets on Aluminum Alloy 7050-T73651 Plate and 7050-T73652 Forging, Received from R. J. Bucci, Aluminum Company of America, Alcoa Laboratories, August 1982.	
BL001	7010	K_{Ic}; K_{Iscc}
	Deel, O., "Engineering Data for New Aerospace Materials," Battelle's Columbus Laboratories, Columbus, OH, Contract No. F33615-78-C-5040, Report No. AFWAL-TR-80-4103, July 1980.	

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REFERENCES FOR THE 7000 SERIES ALUMINUM ALLOY DATA

BL002	7075	a-vs-N; da/dN
	7475	a-vs-N; da/dN

Ruff, P. E., and Smith, S. H., "Development of Mil-Hdbk-5 Design Allowable Properties and Fatigue Crack-Propagation Data for Several Aerospace Materials," Battelle's Columbus Laboratories, Columbus, OH, Contract No. F33615-75-C-5063, Report No. AFML-TR-77-162, October 1977.

BW001	7075	da/dN
	7079	da/dN
	7178	da/dN

Horsley, J. J., and Harris, C. E., "Durability and Damage Tolerance Assessment (DADTA) of B-52 G/H Structure, Task II, Damage Tolerance Assessment Final Report," Boeing Company, Wichita, KS, Contract No. F34601-79-C-1515, Document No. D3-11560-3, June 1980.

BW002	7075	da/dN
	7178	da/dN

Lambert, G., Mecham, P., and Mah, T., "Durability and Damage Tolerance Assessment (DADTA) of B-52 G/H Structure, Task III, Individual Airplane Crack Growth Tracking Program," Boeing Company, Wichita, KS, Contract No. F34601-79-C-2258, Document No. D3-11560-6, November 1981.

DA001	7075	a-vs-N; da/dN
	7475	a-vs-N; da/dN

Fatigue Crack Growth Rate Data Sheets on Aluminum Alloys 2024, 7010, 7050, 7075 and 7475, Stainless Steel Alloys 17-4PH and 17-7PH, and Alloy Steels 4340, A286, H-11, HY-180 and 12-9-2, Sent from Mr. Paul Abelkis, Douglas Aircraft Company, McDonnell Douglas Corporation, Long Beach, CA, March 1982.

DA004	7050	K_{Ic}; a-vs-N; da/dN
	7475	K_{Ic}; a-vs-N; da/dN

Larson, B. F., "C-17 Material Specimen Tests for Fracture Mechanics Data Phase I, Lot 1 Aluminum Alloys Final Technical Report," Contract F33657-81-C-2108, Report MDC J9483-1, June 1987.

TABLE 8.25 (CONTINUED)

REFERENCES FOR THE 7000 SERIES ALUMINUM ALLOY DATA

DA005	7050	K_{Ic}; a-vs-N; da/dN
	7475	K_{Ic}; a-vs-N; da/dN

Kahandal, R. S., "C-17 Material Specimen Tests for Fracture Mechanics Data Phase I, Lot 2 Aluminum Alloys Final Technical Report," Douglas Aircraft Company, McDonnell Douglas Corporation, Contract F33657-81-C-2108, Report MDC J9483-2, April 22, 1988.

DA008	7150	a-vs-N; da/dN

Gutierrez, J. T., "C-17A Fracture Mechanics Data for 7150-T77 Plate and Extrusion Final Technical Report," Douglas Aircraft Company, McDonnell Douglas Corporation, Contract F33657-81-C-2108, Report MDC K0810, April 1989.

EFM01	7075 (ALCLAD)	a-vs-N; da/dN

Mackay, T. L., "Fatigue Crack Propagation and Rate at Low Delta K of Two Aluminum Sheet Alloys - 2024-T3 and 7075-T6," Engineering Fracture Mechanics, Volume II, pp 753-761, 1979.

GD001	7175	a-vs-N; da/dN

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GD002	7175	a-vs-N; da/dN

Kaarlela, W. T., and Nordquist, F. C., "Crack Growth Rate (da/dN) Characteristics of 7175-T7354 Bulkhead Forgings," General Dynamics, Fort Worth Division, Report No. 16 PR721, June 1977.

GD005	7475	K_c

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TABLE 8.25 (CONTINUED)

REFERENCES FOR THE 7000 SERIES ALUMINUM ALLOY DATA

GD006 7475 K_{Ic}; a-vs-N; da/dN; K_{Iscc}

Margolis, W. S., "F-16 Material Test Allowables for Aluminum Alloy 7475, 3.0" Plate - T7351 Temper and 0.5" Plate (92" Width) - T7651 Temper and - T7351 Temper," General Dynamics, Fort Worth Division, Report No. 16PR926, April 1978.

GD008 7075 a-vs-N; da/dN

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GD011 7475 K_c

Margolis, W. S., "Plane Stress (K_c) Fracture Toughness of Thin Elements from Thick Plate of 2124-T851 and 7475-T7351 Aluminum Alloys," General Dynamics, Fort Worth Division, Report No. 16 PR1287, October 1979.

LG001 7175 K_{Ic}; K_c; K_{Iscc}

Carter, F. J., et al., "C-5A Wing Modification Program - Material Characteristics Program - 7175-T73511 Extrusions Final Report," Lockheed-Georgia Company, Marietta, GA, Contract No. F33657-75-C-0178, Report No. LG75ER 0186-2, September 1977.

LG002 7050 (ALCLAD) K_c
7475 (ALCLAD) K_c

Fuselage Materials Tests - Kc Data on Aluminum 7050-T76 and 7475-T61 Materials - sent from E. J. Batch, Lockheed Georgia Company, Marietta, GA, October 1982.

LG003 7175 K_{Ic}

Wygonik, R. H., "Evaluation of the R-curve for Fracture Toughness Quality Assurance Testing of Thin 7175 Aluminum Extrusions," Alcoa Laboratories, Alcoa Center, PA, for Lockheed-Georgia, Contract PO-RW18554, December 1981.

REFERENCES FOR THE 7000 SERIES ALUMINUM ALLOY DATA

MA002 7175 K_{Ic}; a-vs-N; da/dN

Fracture Toughness of Ti-6Al-4V Plate and Forging, Aluminum 2124-T851 Plate and 7175-T37652 Forging and Fatigue Crack Growth Rate for Ti-6Al-4V Plate and Forging, Ti-6Al-6V-2Sn Extrusion, Aluminum 2124-T851 Plate and Aluminum 7175-T73652 Forging, Data Submitted by D. L. Rich of McDonnell Aircraft Co., St. Louis, MO, Attachment #2, Received March 12, 1982.

MA005
7050 da/dN; K_{Iscc}
7075 K_{Ic}; da/dN; K_{Iscc}
7175 K_{Ic}; da/dN; K_{Iscc}
7475 K_{Ic}; da/dN; K_{Iscc}

Garland, K., and Krieg, J. F., "Final Report - Basic Fracture Data for F-18 Material," McDonnell Aircraft Company, St. Louis, MO, Report No. 3 NA-66-7KW, Attachment #5, March 1977.

MA006 7075 da/dN

Garland, K., and Krieg, J. F., "Evaluation of the Effect of Material Cyclic Softening and Hardening on Crack Initiation Life and Crack Growth, with and without Overloads as a Function of Stress Ratio," McDonnell Aircraft Company, St. Louis, MO, April 1978.

MA007
7049 da/dN
7075 da/dN

Garland, K., and Krieg, J. F., "Environment-Load Interaction Effects on Crack Growth," McDonnell Aircraft Company, St. Louis, MO, Report No. 703-116, June 1978.

MA008 7075 da/dN

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MA009 7075 da/dN

Garland, K., and Krieg, J. F., "Evaluation of Crack Growth Gages for Service Life Tracking Program," McDonnell Aircraft Company, St. Louis, MO, Report No. TR 703-325, TM 256-5298, December 1978.

TABLE 8.25 (CONTINUED)

REFERENCES FOR THE 7000 SERIES ALUMINUM ALLOY DATA

MA011	7075	K_{Ic}; da/dN
	7079	da/dN
	7178	da/dN

"Final Report, F/RF-4C/D Damage Tolerance and Life Assessment Study - Vol. II," McDonnell Aircraft Company, St. Louis, MO, Contract No. AFSC F33657-73-A-0062, Report No. MDC A2883, February 1975.

MA012	7075	K_{Ic}; da/dN
	7178	da/dN

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MPC01	7075	K_{Ic}
	7075 (ALCLAD)	K_{Ic}
	7079	K_{Ic}
	7175	K_{Ic}
	7178	K_{Ic}
	7475	K_{Ic}

Collis, S. F., et al., "Fracture Toughness Data Bank for Aluminum Alloy Mill Products," Aluminum Company of America, Alcoa Laboratories, Alcoa Center, PA, Data Submitted by Alcoa, Reynolds Metals, Kaiser Aluminum , and Martin Marietta Aluminum and Prepared for Metal Properties council, Inc., August 1979.

MR001	7075	K_{Ic}; a-vs-N; da/dN
	X7090	a-vs-N; da/dN
	X7091	a-vs-N; da/dN

"Damage Tolerant Test Data on X7090, X7091, and 7075 Aluminum ," Materials Research Laboratory, Ins, Glenwood, IL, Under Contract to ARRADCOM, (DAAK10-79-C-0278), Received June 1982.

NC001	7050	K_{Ic}
	7149	K_{Ic}

Plane Strain Fracture Toughness Data Sets on Aluminum, Steel, and Titanium Alloys, Data sent from P. G. Porter of Northrop Corp., Hawthorne, CA, March 1, 1982.

TABLE 8.25 (CONTINUED)

REFERENCES FOR THE 7000 SERIES ALUMINUM ALLOY DATA

NC002	7050	a-vs-N; da/dN
	7075	da/dN
	7149	a-vs-N; da/dN

Fatigue Crack Growth Rate Data on Aluminum, Steel, and Titanium Alloy, Data sent from P. G. Porter of Northrop Corp., Hawthorne, CA, March 1, 1982.

NC003	7050	K_{Ic}
	7075	K_{Ic}; da/dN

Chanini, G. R., et al., "Methodology for Evaluation of Fatigue Crack-Growth Resistance of Aluminum Alloys Under Spectrum Loading," Northrop Corporation, Aircraft Division, Hawthorne, CA, Contract No. N00019-80-C-0427, April 1982.

RA001	7475	K_{Ic}

Summary of Plane-Strain Fracture Toughness and Notch-Tensile Tests-Reynolds Metals Company, Metallurgical Research Division, Richmond, VA, Project 36-KFP-3M04, September 1978 - June 1980.

RA003	7475	K_{Ic}

Summary of Plane-Strain Fracture Toughness and Notch-Tensile Tests-Reynolds Metals Company, Metallurgical Research Division, Richmond, VA, Project 38KFN-7475 Alloy, March 1978 - November 1978.

RA004	7475	K_{Ic}

Summary of Plane-Strain Fracture Toughness and Notch-Tensile Tests-Reynolds Metals Company, Metallurgical Research Division, Richmond, VA, Project 37-KFN-7475 Alloy, August 1977 - December 1977.

RA005	7475	K_{Ic}

Summary of Plane-Strain Fracture Toughness and Notch-Tensile Tests-Reynolds Metals Company, Metallurgical Research Division, Richmond, VA, Project 38-KFN-3M04-7475 Alloy, May 1980.

RA006	7475	K_{Ic}

Summary of Plane-Strain Fracture Toughness and Notch-Tensile Tests-Reynolds Metals Company, Metallurgical Research Division, Richmond, VA, Project 38-KFP-7475 Alloy, September 1977 - November 1977.

TABLE 8.25 (CONTINUED)

REFERENCES FOR THE 7000 SERIES ALUMINUM ALLOY DATA

RA007 7475 K_{Ic}

Summary of Plane-Strain Fracture Toughness and Notch-Tensile Tests-Reynolds Metals Company, Metallurgical Research Division, Richmond, VA, Project 37-KFP-7475 Alloy, 1977.

RA008 7050 K_{Ic}

Summary of Plane-Strain Fracture Toughness and Notch-Tensile Tests-Reynolds Metals Company, Metallurgical Research Division, Richmond, VA, Project 37-KFP-7050 Alloy-T73651, January 1978.

RA009 7050 K_{Ic}

Summary of Plane-Strain Fracture Toughness and Notch-Tensile Tests-Reynolds Metals Company, Metallurgical Research Division, Richmond, VA, Project 37-KFN-7050 Alloy-T73651, 1977.

RA010 7050 K_{Ic}

Summary of Plane-Strain Fracture Toughness and Notch-Tensile Tests-Reynolds Metals Company, Metallurgical Research Division, Richmond, VA, Project 38-KFP-7050 Alloy-T73651, 1977.

RI002 7178 a-vs-N; da/dN

Data Sheets Containing Fatigue Crack Growth Rate Data on 7178-T651 Aluminum Plate Supplied by J. Stolpestad, Rockwell International, North American Aircraft Division, March 1982.

RI006 7049 K_{Iscc}
7050 K_{Iscc}
7075 K_{Iscc}
7175 K_{Iscc}

Ferguson, R. R., and Berryman, R. C., "Fracture Mechanics Evaluation of B-1 Materials," Rockwell International, B-1 Division, Los Angeles, CA, Contract No. F33657-70-C-0800, Report No. AFML-TR-76-137, October 1976.

TABLE 8.25 (CONTINUED)

REFERENCES FOR THE 7000 SERIES ALUMINUM ALLOY DATA

RI008	7175	a-vs-N; da/dN
	7475	a-vs-N; da/dN

"Crack Growth Test of 7175-T76511 Al Extr," Rockwell International, B-1 Program, Los Angeles, CA, 90009.

SA001	7075	a-vs-N; da/dN

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SW001	7050	K_{Ic}; a-vs-N; da/dN
	7075	K_{Ic}; a-vs-N; da/dN
	7175	a-vs-N; da/dN

Data submitted by Mr. Jack Fitzgerald, Southwest Research Institute, San Antonio, TX.

UD002	7010	da/dN

Cervay, R. R., "An Empirical Model for Loading Ratio Effect on Fatigue Crack Growth Rate Data," University of Dayton Research Institute, Dayton, OH, Contract No. F33615-80-C-5011, Report No. AFWAL-TR-81-4140, November 1981.

UD003	7010	K_{Ic}; da/dN; K_{Iscc}

Cervay, R. R., "Mechanical Property Evaluation on Aluminum Alloy 7010-T73651," University of Dayton Research Institute, Dayton, OH, Contract No. F33615-78-C-5002, Report No. AFWAL-TR-80-4094, July 1980.

UD006	7075	da/dN

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TABLE 8.25 (CONCLUDED)

REFERENCES FOR THE 7000 SERIES ALUMINUM ALLOY DATA

WA001	7049	K_{Ic}; da/dN
	7050	K_{Ic}; da/dN
	7075	K_{Ic}; da/dN

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WL003	8090	K_{Ic}; a-vs-N; da/dN

Phillips, M. A., and Thompson, S. R., "The Mechanical Property Data Base From an Air Force/Industry Cooperative Test Program on Advanced Aluminum Alloys (8090 Extrusion)," Wright Patterson Materials Laboratory, WPAFB, Dayton, OH, 45433-6533, Report WRDC-TR-90-4113, November 1990.

WL005	7075	a-vs-N; da/dN

Data submitted by Mr. Jim Harter from ASTM round robin, Wright Patterson Materials Labs, April 1992.